East Africa's growing power:
Challenging Egypt's hydropolitical position on the Nile?

by:
Nora Hanke

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Supervisor: Gerrie Swart

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DECLARATION

I; the undersigned, hereby declare that the work contained in this assignment is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Signature:

Date: 22.02.2013

ABSTRACT

This case study on East Africa analyses the impact of changing power relations over the last decade on Egypt's hydro-hegemony on the Nile River Basin. Covering one-tenth of Africa's landmass and providing resources for the 340 million people and countless species, the Nile is exemplary of Africa's geographic, cultural and ecological diversity, as well as its political complexity. Eleven riparian states lie in its basin area and compete for dwindling water resources as demand rises in a highly asymmetrical power relationship between upstream and downstream states.

Egypt, although geographically disadvantaged due to its downstream position, has established hydro-hegemony by combining material capabilities, legal and institutional mechanisms, as well as knowledge production. Its relative wealth is contingent upon the supply of Nile water, as it makes up 95% of Egypt's freshwater. Egypt has legally secured its claim through the 1959 *Treaty on the Full Utilisation of the Nile Waters* which divides the Nile water flow between Egypt and Sudan. Egypt further established consolidated control by using its downstream position in the World Bank to *de facto* veto upstream hydro-electric power projects throughout the 1990s.

In contrast, the East African Community Partner States only started to lay claim to the water over the last decade due to its history of colonialism, proxy wars and political instability. In 2002, the EAC decided to manage the Lake Victoria Basin jointly. Paired with growing stability and economic growth in the region, this management has attracted Chinese investment in hydro-electric power projects, notably dams, giving East Africa financial independence from both the World Bank and Egypt to build hydro-infrastructure projects. East African states use the influx of Chinese investments to increase their respective defence budgets while Egypt's military spending, as a share of GDP, has been decreasing over the last decade. Under the Nyerere Doctrine, East African states refuse to honour the 1959 Treaty and have asked for re-negotiation. The first step was taken in 2011, when six upstream states under EAC leadership signed the Cooperative Framework Agreement paving the way for re-negotiation, in the face of Egypt's explicit refusal.

Domestic factors in Egypt, coupled with East Africa's growing self-confidence, are slowly changing the power relations in the Nile basin. Using the London Water Research Group's *Hydro-Hegemony* framework in a triangular diachronic single-case study research design, this study traces the processes of counter-hegemony and hydropolitical power shifts.

Understanding these political processes is the first step towards the sustainable distribution of the Nile water resources on the basin level.

OPSOMMING

Hierdie gevallestudie oor Oos-Afrika ontleed die impak van veranderende magsverhoudinge op Egipte se beheer oor die loop van die Nylwater gedurende die laaste dekade.

Die Nyl, wat vloei oor een tiende van die landmassa van Afrika en lewensmiddele verskaf aan die 340 miljoen mense en ontelbare spesies wat daar ´n bestaan voer, dien as voorbeeld vir Afrika se geografiese, kulturele en ekologiese diversiteit sowel as die politieke kompleksiteit daarvan. Elf oewerstate lê in die Nylopvanggebied en wedywer vir waterbronne wat afneem, terwyl die aanvraag styg in ‘n hoogs asimmetriese magsverhouding tussen die lande wat stroomop en stroomaf geleë is.

Alhoewel Egipte geografies benadeel is deur stroomaf geleë te wees, het die land hidrohegemonie verkry deur middel van sy materiële vermoëns, wets- en institutêre meganismes, en kennisproduksie. Die relatiewe rykdom van Egipte is afhanklik van die beskikbaarheid van Nylwater, wat 95% van die land se varswater verskaf. Egipte het sy aanspraak daarop wetlik vasgelê deur middel van die 1959 *Verdrag oor die Volle Gebruik van die Nylwater*, wat die Nyl se vloei verdeel tussen Egipte en die Soedan. Gedurende die 1990s het die land sy beheer verder versterk deur sy stroomafposisie by die Wêreldbank te gebruik om hidroelktriesekragprojekte stroomop *de facto* te veto.

As gevolg van ‘n geskiedenis van kolonialisme en politieke onrus, het die lidstate van die Oos-Afrikaanse Gemeenskap (OAG) egter eers gedurende die laaste dekade begin om die Nylwater te eis. In 2002 het die OAG besluit om die Victoriameer-opvanggebied gesamentlik te beheer. Hierdie beheer, saam met toenemende bestendigheid en ekonomiese groei in die gebied, het aanleiding gegee tot Chinese beleggings in hidroelektriesekragprojekte, veral damme, sodat Oos-Afrika finansiële onafhanklikheid verkry het van beide die Wêreldbank en Egipte om sy eie hidro-infrastuktuurprojekte te bou. Terwyl die Oos-Afrikaanse lande die invloei van Chinese beleggings gebruik om hulle onderskeie verdedigingsbegrotings te vergroot, het Egipte se militêre uitgawes afgeneem as ‘n deel van die BBP oor die laaste dekade. Die Oos-Afrikaanse lande beroep hulle op die Nyerere Dokrine deur te weier om die 1959 Verdrag na te kom, en het versoek dat dit heronderhandel word. Die eerste treë is in 2011, geneem toe ses stroomoplande onder die leierskap van die OAG die Koöperatiewe Raamwerk Verdrag onderteken het, wat die pad voorberei vir heronderhandeling ten spyte van Egipte se onomwonde weiering daartoe.

Plaaslike faktore in Egipte, saam met Oos-Afrika se groeiende selfvertroue, begin om stadigaan die magsverhoudinge in die Nylopvanggebied te verander. Hierdie studie gebruik die London Water Research Group se Hidrohegemonieraamwerk om die prosesse van kontrahegemonie en hidropolitieke magsverskuiwings na te spoor in ’n driehoekige diachroniese enkelgevallestudie navorsingsontwerp.

Om hierdie politieke prosesse te verstaan is die eerste stap tot die volhoubare verspreiding van waterbronne in die opvanggebied van die Nyl.

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
AMCOW	African Ministers' Council on Water
ARN	African Rivers Network
AU	African Union
BTI	Berthelsmann Transformation Index
CFA	Cooperative Framework Agreement
COMESA	Common Market for East and Southern Africa
DRC	Democratic Republic of the Congo
EAC	East African Community
ENSB	Eastern Nile sub-Basin
ERA	Electricity Regulatory Authority (Uganda)
EXIM	Export-Import (Bank)
FAO	Food and Agricultural Organization
FTA	Free Trade Agreement
GDP	Gross Domestic Product
ha	hectare
HAD	High Aswan Dam
HEP	Hydro-electric power
HIV	Human immunodeficiency virus
HPC	Hydropolitical Complex
ILC	International Law Commission
IR	International Relations
LAPSSET	Lamu Port- South Sudan- Ethiopia, Transport and Economic Development Corridor
LDC	Least Developed Countries
LVB	Lake Victoria Basin
LVBC	Lake Victoria Basin Commission
LVEMP	Lake Victoria Environmental Project
LVFO	Lake Victoria Fisheries Organization

LRA	Lord's Resistance Army
LSE	London School of Economics
LWRG	London Water Research Group
MDG	Millennium Development Goal
MDI	Multidimensional Poverty Indicator
MW	Megawatt
NBD	Nile Basin Discourse
NBI	Nile Basin Initiative
NELSB	Nile Equatorial Lakes sub-basin
NGO	Non-governmental organization
NRB	Nile River Basin
NRA	New Regionalism Approach
OAU	Organisation of African Unity
PAD	Project Appraisal Document
PJTC	Permanent Joint Technical Committee
PRC	People's Republic of China
RBO	River Basin Organisation
RRFP	Rusumo Falls Hydro-electric Multipurpose Project
RSCT	Regional Security Complex Theory
SADC	Southern African Development Community
SAP	Strategic Action Plan (NBI)
SIWI	Swedish International Water Institute
SWH	Swedish Water House
TFFD	Transboundary Freshwater Dispute Database
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
WWAP	World Water Assessment Programme

CHAPTER 1: AIM, SCOPE AND METHOD[1]

1.1 Introduction to Study

The question *Who gets how much water and why?* (Lasswell, 1935) guides all political scientists writing on transboundary waterways in one way or another. The aim of this study is to investigate the impacts of the founding of the East African Community (EAC) and resulting regional cooperation, on Egypt's historical hegemonic control of the Nile's water resources. It is argued that the five EAC Partner States: Burundi, Kenya, Rwanda, Tanzania and Uganda, for the first time since independence in the 1960s, are successfully challenging Egypt's hydro-hegemony and laying claim to the water resources. This means that Egypt's control over the Nile resources is decreasing and it has to invest in new water resource control strategies.

The world's longest river, the Nile River, is one of Africa's foremost lifelines, its basin area covering a tenth of the continent's landmass (see Map 1.1, page 3). It stands for the continent's geographic, cultural, and ecological diversity. The Nile River is made up of two main tributaries, the Blue and White Nile[2], which unite in Sudan's capital Khartoum from where they flow into the Mediterranean Sea at Egypt. The Blue Nile has its upstream[3] source in northwestern Ethiopia while the White Nile flows out of Lake Victoria in Jinja, Uganda. It carries relatively little water[4] and with large seasonal variations. Eleven sovereign states lie within its basin area (see Map 1.2., page 3), making distribution an intricate political totality. Despite being divided by state boundaries, the Nilotic peoples and species are united through their co-dependence on the Nile's water and fishery resources.

The fact is that water distribution varies significantly between the eleven riparian states. As a matter of fact, the "main hydraulic and political features of the basin (...) are the asymmetric use of water resources" (Cascao, 2008: 13). Access to the scarce, non-substitutable resource,

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[1] Conference presentation arising from this thesis:
Hanke N. July 2012. Crossing Boundaries in the Nile River Basin: The East African Community's Challenge to Hydro-Hegemony. Panel Presentation at the International Water Association's Young Water Professionals Conference, Budapest, Hungary (Chapter 1 and Chapter 3)

[2] To a negligible degree the Bahr al Ghazal Basin also contributes to the Nile water flow (Jacobs, 2009:2)

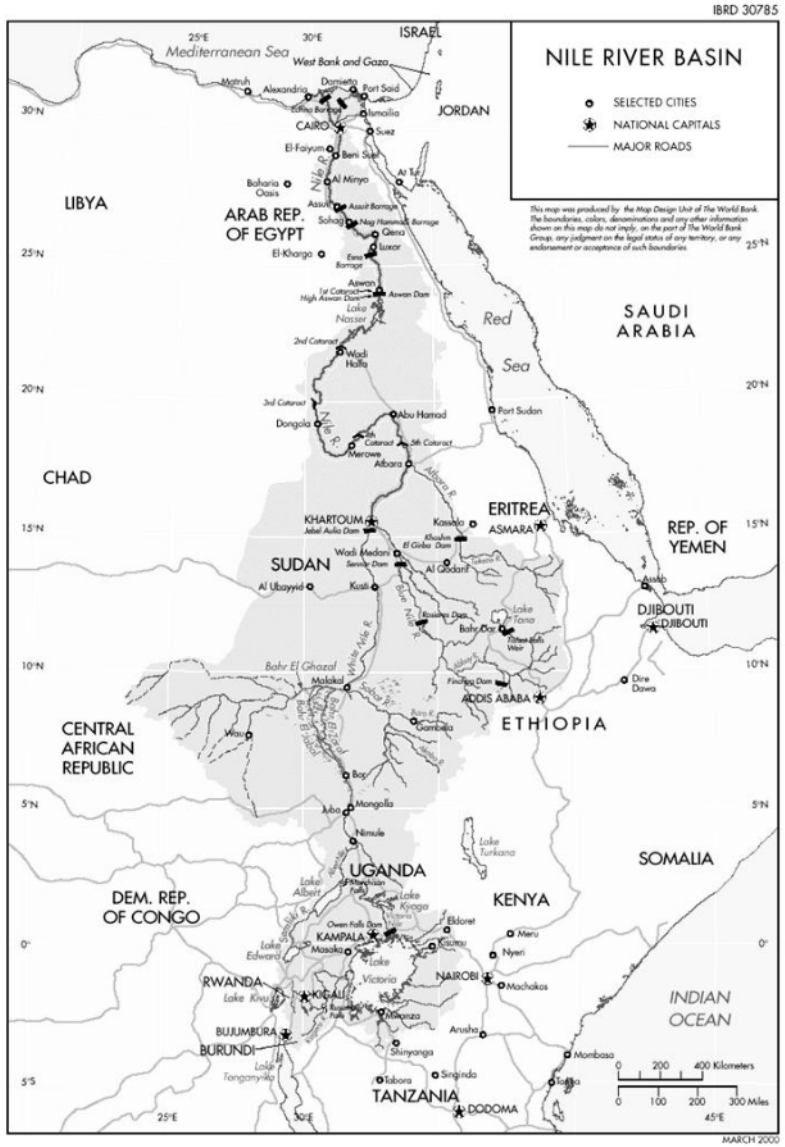
[3] Upstream refers to the location close to the source, contributing to the water flow; downstream being away from the source (see Table 1.1).

[4] In this study "water "only refers to fresh water, i.e. drinking water.

water, is determined by politics: “The scarcity at the heart of the global water crisis is rooted in power, poverty, and inequality, not in physical availability” (UNDP, 2006: 2). In the case of the Nile River Basin (NRB) the asymmetrical power relations are reflected in the inequitable water distribution of upstream and downstream riparians. The most downstream state, Egypt, has consolidated control over the water flow, although 95% of the water originates outside its sovereign territory.

The colonial legacy, the global political climate, lack of international investment as well as few military and economic capabilities, the absence of coherent water policies, a weak and unclear international legal framework, and political instability have meant that upstream riparians were unable to assert their water interests (Cascao, 2008: 254). In the last ten years, upstream riparians have invested material capabilities, built-up regional water management institutions, and signed the Cooperative Framework Agreement (CFA), thus sending a signal to the downstream states that they are now in a position to challenge the asymmetrical power relations in the NRB and claim water. As a result, the NRB is now “characterized by a highly politically dynamic environment” (Cascao, 2008: 249).

Map 1.1 and 1.2: The Nile River Basin and the Riparian States (NBI, 2011; Bekheet, 2011)



The eleven riparian states: Burundi, the Democratic R
the Congo (DRC), Egypt, Ethiopia, Eritrea, Kenya, R
Sudan, Tanzania, Uganda and, as of June 2011, the R
South Sudan

1.2 Problem Statement and Research Question

Sixty-four of the world's two-hundred and sixty transboundary river basins, i.e. rivers crossing internationally recognized state boundaries, are located in Africa (Ashton, 2009). This makes the entire freshwater distribution on the continent an international political issue, yet uniform institutional or legal policies are in place neither on the international nor the continental level. Since populations across the continent are growing and the already scarce resource is likely to decline further due to man-made climate change (Scheumann & Herrfahrdt-Pähle, 2008: 3), distribution is becoming a continental priority. Water scarcity has officially been recognized in 2002 by the continental leaders when the African Ministers' Council on Water (AMCOW) was established, thereby elevating water onto the highest political agendas.

In terms of the utilisation of its water the Nile represents the duality of the water resources being simultaneously under-developed (hydroelectricity) and over-exploited (agriculture) (UNDP, 2006). The 224 million people living in its basin area depend on the Nile for water. Most of the water, that is, around 72%, is used for arguably ineffective irrigation schemes and few dams are in place to mitigate flooding and store water for the dry seasons. In addition, the Nile's resources have been and still are highly unevenly distributed across time and space[5] (Rangeley *et al.*, 1994: 4).

Over many decades Egypt, with explicit Sudanese support and implicit international backing, has controlled the Nile water flow and thus firmly established hydro-hegemony. "Egypt's strategy to the Nile basin relations has been impressive in its attention to detail and its global scope" (Allan, 2000: 258). Through a combination of different strategies in the legal, political, and economic realm, Egypt has managed to sustain its hegemony and weaken others' position to utilise the vast majority of the water resources.

Over the last ten years, East Africa's power has made great strides and the region is now for the first time successfully claiming equitable access to the Nile. East Africa's economic and political development can also be traced back to the founding of the EAC in 1999 and

[5]Time: In 1916 the Nile water flow was 120km³/year and in 1984 42km³/year, measured in Aswan (Collins, 1990 cited in Saleh *et al.*, 2008: 7). Additionally, the rainfall varies significantly from season to season.
Space: Egypt receives 95% of its water from the Nile River but most of that water originates in the Ethiopian highlands (Swain, 2008: 204).

enlargement in 2007. The five Partner States, Burundi, Kenya, Rwanda, Tanzania and Uganda are united by a "common history, language, culture and infrastructure" (Venter & Neuland, 2007: 45) and economic integration is being fast-tracked (EAC, 2011a). It is a region that is transforming itself and thus changing the rules of the game, consequences of which can be felt throughout the continent. The change in the power dynamic will have repercussions on the basin-wide water distribution since the relevant East African countries are situated at the most upstream source of the Nile, the Lake Victoria Basin (LVB) (see Map 1.3, page 11).

Most hydropolitical research since the 1990s has focused on whether water scarcity will lead to conflict or to cooperation (Jacobs, 2006: 2). The Nile, with its low water volume and uneven distribution, has been a focal point for political scientists like Ana Cascao, John Waterbury, Jeroen Warner, Anthony Turton, and Inga Jacobs. This study moves away from the state-centric conflict-related research paradigm and looks at the understudied Nile Equatorial Lakes sub-basin, which is located in East Africa, and away from the conflict-cooperation paradigm to assess the primary research question: **What are the impacts of East Africa's change in power on Egypt's hydropolitical position on the Nile River Basin?**

Two supportive research questions derived from the primary research question are:

What is power in this study?

Using Mark Zeitoun and Jeroen Warner's framework of Hydro-hegemony (2006), this study conceptualises hydro-hegemonic power as being based on three dimensions: i) material, ii) institutional and iii) ideational. The actor with the greatest power in all three dimensions uses a combination of coercive and convincing strategies to control the water flow. The actor that has 'consolidated control' over the water flow, is the hydro-hegemon. Whether the water distribution is equitable or not, depends on the hydro-hegemon.

How can hydro-hegemony be challenged?

Although the hydro-hegemon controls the water flow, the other actors in the basin, are not passive. Power is negotiated and relative among all actors. Ana Cascao (2008) identified seven counter-strategies which are divided into phases of resistance: firstly, the actor aims at identifying the source of the current regime. This is followed by the active phase whereby the non-hegemon delegitimizes the hydro-hegemon i.e. undermining the *status quo* of water distribution. Finally, a new regime of water distribution is created.

1.3 Research Design

The abovementioned research questions are large in scope and depth and require a tight methodological framework. This study will use the single-case study research design to provide for scientific clarity. The case, or "spatially delimited social unit under consideration" (Gerring, 2007: 26), is East Africa. This means observations are collected on one geographic unit, hence, *single*-case study. It is the unit from whence one can draw conclusions for the larger population, namely African transboundary river basins.

Many case studies appear to exist in what Gerring refers to as a "curious methodological limbo" (2007: 7). In order to avert this 'limbo', this section on research design and methodology outlines why a case study research design approach was chosen and how the data was collected. Several aspects of a case study research design are addressed in this section; and there is a general introduction to the diachronic single-case study as well as a discussion of its advantages and disadvantages for this specific study on East African hydropolitics.

A single-case study research design allows connecting the micro and macro level of social structures and processes (Vaughan, 1992 cited in Neuman, 2006: 41). Specifically river basins profit from this research design as each river is part of a larger water system which in its largest form exists on a global level. Water systems worldwide are interconnected and have to be understood as whole, not divided parts. From ponds to glaciers, ground water, oceans and in form of clouds there is one global system which supplies the most basic resource for life; water. It is important to keep this interdependence in mind even when focusing on a specific water system. A case study allows for a highly contextualised understanding of East Africa with an eye on the global and local level and the generalisation of the findings to other African river basins.

However, generalisation also decreases the external validity which is the "ability to generalize findings beyond a specific study" (Neuman, 2006: 264), i.e. the strength between the case and population. Considering that this is a single case with few observations, this study cannot claim strong external validity of propositional scope. That being said, the NRB is considered to be typical of the asymmetrical water distribution that often occurs in transboundary river basins. There are altogether eighty transboundary river basins in Africa which share some common characteristics. These are among others, high levels of poverty and rapid population growth, a lack of international and regional resource governance policy harmonisation (a

notable exception is the Orange River basin, see Turton & Funke, 2008; Jacobs, 2009), as well as a shared history of colonialism and proxy wars which shape international and domestic politics until today. As a result of these commonalities, the East African case allows for some generalisation to the other 79 transboundary river basins as long as the specific context of each is kept in mind.

The ongoing debate in International Relations (IR) between positivists, who continue to see the state as the central actor in international relations, and post-positivists, who deem local, regional and global actors as equals to the state construct, also trickles down to this study. Although Zeitoun and Warner (2006), Zeitoun and Allan (2008) and Cascao (2008, 2009), who use the Hydro-hegemony framework, belong to the positivist school of thought, this study adapts the Hydro-hegemony framework to incorporate the regional level of analysis. East Africa, as will be shown below, warrants a regional analysis of changing power dynamics.

1.4 Purpose and Significance of the Study

Power, material, institutional and ideational, as well as the reasons and dynamics of change in power relations, forms the basis of political science. "The central interest of studying power relations [is] (...) an interest in the (attempted or successful) securing of people's compliance by overcoming or averting their opposition" (Lukes, 1974: 31). What happens to the hegemon when this compliance is no longer given? The primary focus of this study is East Africa's growing power and the impact East Africa's increasing power has on Egypt's control over the transboundary Nile water flow. Yet findings could contribute to understanding the larger picture of power relations in African river basins where newly independent countries are finding their feet in regional groupings and challenge the *status quo*. The central interest of studying power relations is thus to determine how counter-strategies emerge how new regimes are negotiated.

At a higher level of abstraction, therefore, this study aims at generating a hypothesis on regional hydropolitics in the NRB by looking at East Africa. By making the region the central unit of analysis and integrating it into the current literature on power asymmetries in river basins, it is hoped a well-rounded theoretical lens is created, to analyse the NRB and thereby contribute to the growing discussion on the consequences of power asymmetries in river basins, on which there is still a considerable scope for more research (Zeitoun & Warner, 2006: 454).

The significance of the study arises from its three objectives:

to describe the sources and strategies of power that Egypt, the hydro-hegemon, has utilised and how East Africa is in the process of changing the power relation;

to analyse, in depth, how this is challenging Egypt's hydro-hegemony on the NRB;

and to enhance our understanding of water-sharing dynamics in the Nile.

Water is life and East Africa is navigating the waves of power before it runs dry. The changing power relationships between upstream and downstream riparians, be they states or regions, determines who gets the water. As rapid population growth, large-scale irrigation projects, hydro-electric power (HEP) plants, the unpredictable consequences of climate change and declining water quality come together, the distribution of freshwater is a political, economic and basic survival priority area. In his book on the Owen Falls community in California and the members' protests on the privatisation of water, Walton wrote that he tried "to tell big story through the lens of a small case" (1992). I hope that, by the end of the dissertation, the readers feel that they have understood both the smaller and the larger picture.

The larger picture and real life application was subject of discussion at a talk on "Breaking down the Ivory Tower of Academia". Publishers, journalists, and academics stressed the importance of research linkages to the 'real world'. There are few fields as 'real world' as studying hydropolitics. The distribution and control of the Nile is essential to agriculture, fishing, and underground water systems which are all interlinked. Therefore, any analysis on 'who gets the water in the future and why?' is highly relevant in a 'real life' context.

In addition to its interest for policy-makers, this study might hold some interest for students of hydropolitics since it is twofold, consisting of both the theoretical framework and the NRB as a case study. Conceptually, the contribution that critical approaches can make to hydro-hegemony is being explored here. Such an exploration might be an encouragement to other students to critically engage mainstream theories. The current study, in fact, was inspired by Dr. Inga Jacobs, herself a student of hydropolitics at the University of Stellenbosch.

1.5 Motivation for Selection of East Africa

The primary reason for choosing East Africa lies in the shared water governance and development of the LVB's resources under the auspices of the Lake Victoria Basin Commission (LVBC). 2003 marks the year in which the EAC partner States agreed to

"cooperate in relation to Lake Victoria Basin in a co-ordinated and sustainable manner and that the Partner States have agreed to negotiate as a bloc on issues relating to the basin" (EAC Protocol of Sustainable Development of Lake Victoria, Preamble).

The EAC founding states, Kenya, Tanzania, and Uganda, have previous experience in coordinating their resources, through the Lake Victoria Environmental Project (LVEMP) and the Lake Victoria Fisheries Organization (LVFO) both of which were founded in 1994 to control the water hyacinth levels and keep overfishing in check, respectively. The LVBC describes itself as

> A specialized institution of the East African Community that is responsible for coordinating the sustainable development agenda of the Lake Victoria Basin. The establishment of the Commission has been sequential and bas[es] itself on study outputs and step-wise building of the institution. First the Partner States, in the first EAC Development Strategy (1997-2000), designated the Lake Victoria and its basin as an economic growth zone to be exploited in a coordinated manner. (LVBC, 2012)

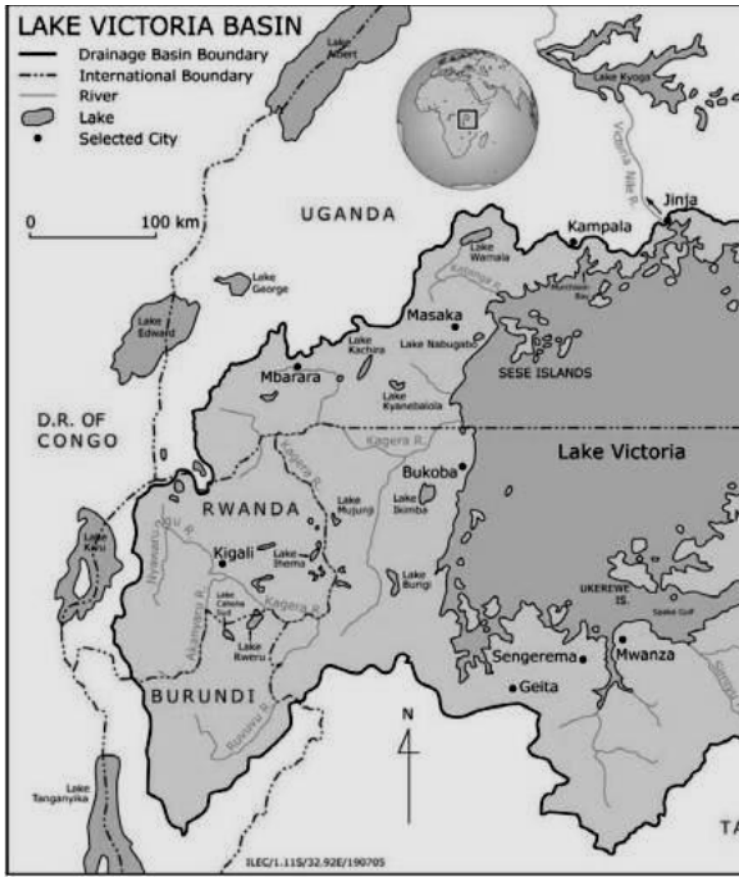
This regional economic growth zone is in line with the World Bank's policy to fund economic development projects on a sub-basin level as the circumstances vary within the Nile' highly complex hydrological river basin. The World Bank has therefore divided the Nile and its numerous tributaries into two sub-basins: first, the Eastern Nile (ENSB) which is equivalent to the Blue Nile and originates in the Ethiopian highlands and second, the Equatorial Lakes sub-basins (NELSB) which incorporate the East African Great Lakes region (Cascao, 2009: 10). The ENSB is the only sub-basin that has a regional water resource governance body. Their coordination has enabled the EAC Partner States to utilise previously unused Nile waters, to influence the frameworks of international law and knowledge production, and to increase the bargaining power of the EAC Partner States. Although the East African states do not enter Nile negotiations as a communal block, the Partner States jointly enter negotiations, having previously decided on aims and thus increasing their bargaining power by acting as a community, not individual states.

It is precisely its common governance of the shared water resources that enables East Africa to lend itself to a case study of changing power relations along the Nile. This regional cooperation has led to the building of new multi-states dams which sit between countries and feed electricity into several countries' grids. To show that East Africa has come a long way

from being a conflict-ridden region and has progressed to pioneering multi-state solutions to underdevelopment, one might cite the Embassy of Rwanda in Sweden's tweet® from the 2012 World Water Week in Stockholm: "Rusumo waterfalls Hydro electric power project [was] cited a lot at #WWWEEK [World Water Week] in Stockholm as model for multi-state projects in the Nile basin" (RwandaEmbassy Sweden, 2012).

The above discussion highlights the fact that the EAC is currently the only regional organisation in the world to challenge a hydro-hegemon. Ethiopia, by contrast, contributes 85% to the total water flow at Egypt, compared to East Africa's mere 15%, but acts unilaterally (Cascao, 2009: 253). This makes East Africa a key in the hydropolitical situation on the NRB.

Maps 1.3 and 1.4: East African Community (EAC) Partner States and the Lake Victoria Basi EAC, 2011a)



Partner States: Burundi, Kenya, Rwanda, Tanzania, and Uganda

1.6 Methodology

Founded on the aforementioned purpose and reasons for this case study of East Africa, this section will describe how the study was conducted and the data obtained. This is a descriptive case study which uses quantitative and qualitative data and a few observations to support the findings. The largest part of the research as well as the data collection is based on second-order research, meaning the analysis of texts and statistics. The study therefore makes use of the information available and will not delve into the underlying reasons of policies or data, hence the use of descriptive methodology[6]. To gain access to as many different angles as possible, this study uses numerous authors and sources from a variety of media, however, mainly academic journals and books. As King and his colleagues point out: "Harvesting relevant information from others' data, (…) may often be the best way to obtain relevant information" (1995: 455).

The advantage of the currently available statistical research tools is that they allow for large amounts of data to be used relatively inexpensively and that the research can be replicated. However, the disadvantage is a danger of 'misplaced correctness', i.e. overquoting data when the focus should be on interpreting it (Neuman, 2006: 335). By constantly distinguishing between the interesting and the relevant, it is hoped this study escapes this fallacy.

In addition to the secondary sources, some primary sources are used, for example websites from ministries and institutions. Also, part of the research was conducted by observing the real-life context of the Nile in East Africa. The author was based at the University of Dar es Salaam, Tanzania, for six months, from January 2011 until July 2011. During that time I had the privilege of talking informally with fishermen, activists and other students of the subject matter. Their experiences highlighted the importance of a multi-layered, qualitative approach to the Nile.

Triangulation, the combination of different research methodologies, is used to be able to encompass the complexity of hydropolitical relations that "are rarely transparent or easily quantifiable" (Zeitoun & Allan, 2008: 3) and increase the study's validity (Foster, 1996: 91). Triangulation offers the opportunity to crosscheck data and gain different insights (Cassim, 2012) and flexibility (Gerring, 2007: 33). Quantitative analysis, in the form of statistics,

[6] Although, in some cases the decisions that led up to the evidence provided is part of the analysis and more explanatory background is required. However, this addition does not make the study exploratory by nature.

addresses *what* the situation in the NRB is and the actors involved on the regional level. Qualitative analysis answers the question of *why* the situation has come about and what impact this has had. Using triangulation allows for evidence to be viewed synergistically (Huberman & Miles, 2002: 7).

Many of the findings are presented in tables, figures, and maps. Statistical data like the Gross Domestic Product (GDP), population size, hydrological data etc. is presented in tables for the reader to take in data in a straightforward and visual manner. Maps of the regions are meant to contextualise the various levels and locations to one another. In general, I tried to mix genres to support the analysis and increase transparency. The power ratio organigrams which is introduced in Chapter 2 allows the measurability of power. This increases the internal validity of the study and allows other researchers to replicate the study or apply the same framework to other cases.

A further aspect of the presentation of information in the present study is the cross-case study component, meaning the comparison of data in the present case study to other cases studies done by other researchers. According to John Gerring (2007: 22), most case studies feature to contextualise or clarify distinctions. For example, most readers have no comprehension of how much 84m³ annual water flow is. Is that a lot or little? The Nile's average annual water flow makes up only 2% of the Amazon's, 15% of the Mississippi's and 20% of the Mekong's annual water flow (Mohamoda, 2003: 7). This comparison across the immediate case illuminates that for the world's longest river, this is relatively little water volume. Therefore, some cross-case study elements are utilised for the purposes of verification. In light of the fact that power is seen relational, Egypt, as hydro-hegemon, is repeatedly used to contrast its power capabilities with the relative lack thereof upstream, i.e. it is an external variable to the study.

1.7 Limitations, Delimitations and Assumptions

The study was affected by limitations of time, scope, and finances, which are discussed here. First, the scope of the study was limited to a regional perspective on a specific geographical region, namely East Africa as delineated by the EAC. In order to clarify the relationship and units of analysis clearly, the author assembled Table 1.1 (page 15). The table defines the units, where they are located, who governs them and some description. For example, the table clearly shows that the EAC encompasses a territory that spans the five Partner States;

Burundi, Kenya, Tanzania, Rwanda, and Uganda. Furthermore, the table highlights how Ethiopia's only connection, in terms of analysis, to the EAC is by also being classified as upstream. This limitation in terms of the geographical unit means that individual state policies are mostly put aside in favour of EAC policies.

Consequently some actors might be given less agency than they deserve as the affected populations. Particularly the Arab Spring, which has been haunting Egyptian society since the end of 2010, is largely excluded from the analysis. First, this is based on a methodological reason; the case study focuses on East Africa and merely uses Egypt, the hydro-hegemon, as a benchmark to highlight the changing hydropolitical configuration of the NRB. Second, as will be mentioned later in the discussion, the Egyptian government has not changed strategies and tactics to control the Nile water flow since they came to power. The Arab Spring was about domestic foreign policy issues and has thus not resulted in large-scale foreign policy changes. This is the study's largest limitation.

Table 1.1: Geographic and political units in the Nile River Basin (assembled by the author)

Geographic unit	Size	Political institution	Description
Nile River/Nile	Surface water flow; 84km³ per annum		
Nile River Basin (NRB)	3 million km² catchment area (Map 1.1, p.3)	Nile Basin Initiative (NBI) (Map 1.2, p.3)	A World Bank Initiative which brings together the ten riparian states
Downstream (analytical sub-basin)	Sudan and Egypt	Permanent Joint Technical Committee (PJTC)	Created under the bilateral 1959 Agreement which binds the two riparian states hydro-politically together
Upstream (analytical sub-basin)	Burundi, DRC, Eritrea, Ethiopia, Kenya, Rwanda, Tanzania, Uganda	2012: permanent river basin commission	Except the DRC and Eritrea[7] the upstream riparians signed the CFA which has to be ratified until March 2012
Nile Equatorial Sub-Basin (NELSB)	White Nile sub-basin	Nile Equatorial Lakes Subsidiary Action Programme (NELSAP)	Investment-oriented sub-basin division by the NBI for the NELSB
Eastern Nile Sub-Basin (ENSB)	Blue Nile sub-basin	Eastern Nile Subsidiary Action Programme (ENSAP)	Investment-oriented sub-basin division by the NBI for the ENSB
Lake Victoria Basin (LVB)	184 000 km² catchment area (Map 1.4, p.10)	Lake Victoria Fisheries Organisation (LVFO)	Management of common fish stock in the Lake Victoria under the EAC
		Lake Victoria Basin Commission (LVBC)	Management of water resources under the auspices of the EAC
East Africa	**1.82 million km² (incl. water)**	**East African Community (EAC) (Map 1.3, p.10)**	**Partner States: Burundi, Kenya, Rwanda, Tanzania, Uganda**

[7]Eritrea has always been on the sideline of the Nile water negotiations and continues to be an observer rather than a fully-fledged member of the NBI. Since independence, the DRC has been subject to political instability and its Eastern Kivu region continues to be embroiled in protracted intrastate conflicts.

In addition, the scope of publicly available information is limited. Having limited the study to East Africa and drawing the physical borders around the Partner States of the EAC, the researcher experienced some difficulty of finding statistics that matched the case. Considering that statistics are created for governments and organisations, it is not surprising that the unit of anaylsis in most statistics is the state (Thomas, 1996: 125). It was not always possible to perfectly match the available statistics to this study's unit of analysis and there was some danger of committing an Ecological Fallacy or Reductionism[8]. The overwhelming use of the countries as social units in statistical data collection meant that the original focus on the LVB had to be enlarged to East Africa as a whole. In view of the dependency of the populations on the Nile's resources outside the immediate basin area, coupled with the fact that policies affecting the basin are made on the regional, not basin-level, enlarging the unit to encompass the EAC at large was a logical step to take and should not influence the findings of the study.

Another limitation for this study, or for that matter any study that makes use of secondary data, is that the reliability of secondary data is uncertain. By way of example, according to different sources the predicted population growth in the LVB varies from 500 million in 2025 (Mohamoda, 2003: 1) or 500 million 25 years later, in 2050 (Waterbury, 2002), to the slightly lower average growth rate of around two percent which would amount to around 600 million in 2050 (UNEP, 2010: 70). Statistical differences can occur due to sources' use of different data sets, different weighing of factors or interpretation of results. A secondary researcher finds it hard to discern the background of data interpretation and collection and one has to rely on the source alone. This problem is compounded by the fact that many United Nations (UN) institutions borrow data from each other, in other words, there is often no other source to check the data against as the trace leads back to the same source. As a general rule, this study will rely on the newest available statistics and on the most reliable sources, which is to say, independent sources and cross-reference the data where possible.

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[8] Ecological Fallacy: "An error in explanation in which empirical data about associations found among large-scale units of analysis are greatly overgeneralised and treated as evidence for statements about relationships among much smaller units." Reductionism: "An error in explanation in which empirical data about associations found among small-scale units of analysis are greatly overgeneralised and treated as evidence for statements about relationships among much larger units." (Neuman, 2006: 168-169)

A further point that perhaps needs to be mentioned in this context is that laws, policies, and regulations will largely be taken at face value. The implementation gap between policies that exist on paper and how, or if at all, they are implemented, is beyond the scope of this dissertation. Only in a few cases, such as the East African environmental laws where breaches have been widely reported (for example by S. M. M'Nyiri, 2010), will this weakness of policy implementation be addressed.

Although this study does no more than touch upon the implementation gap, it can be argued however, that this gap is especially wide in the environmental policy sphere due to a lack of political will and insufficient state structures. These deficiencies in the East African countries may be inferred from their low scores on the Bertelsmann Transformation Index (BTI) in the category of *Stateness* which is the degree of the state's monopoly on the use of force, state identity, interference of religious dogmas and basin administration (BTI, 2012). The East African states average at 7.2 out of ten, with Rwanda at eight and the DRC at five describing the opposing ends. These scores imply, among other things, that the East African governments are unable to fully implement their policies. The critical reader and analyst should keep this in mind to understand that the written word and on the ground processes are not always coherent.

During the course of the study it became apparent that the fixed period of time that is its focus was a limitation, and that it was sometimes necessary to refer to data that falls outside this period. The data covers the processes taking place in East Africa from 2003 to 2012, making the present study a *diachronic*[9] single-case-study as it takes a historical look at the region and analysis the recent political developments. The *analysis* of the social processes is based on the developments since 2003, the year the regional unification process began.

One of the main criticisms levelled against case studies is the potential subjectivity of evidence collection. On one hand, this can lead to a skewed analysis and misinterpretation of the evidence presented. On the other hand, it is this 'fuzziness' that allows for the hypothesis-generating capacity of the data (Gerring, 2007: 41). In the present study data has been collected for the purpose of analysing the impacts of East Africa's growing power on Egypt's hydro-hegemony in the NRB. The Hydro-hegemony framework is the filter through which

[9] A diachronic case study refers to "observing the case or some sub-set within the case units over time" as opposed to synchronic studies which refer to a 'snap-shot' (Gerring, 2007: 21).

data is seen and interpreted. The operationalisation of concepts should therefore limit the degree of subjectivity and increase the study's internal validity.

Lastly, the discussion of Water Wars in hydropolitical literature has shown that assumptions of how the environment and the economy interact are of fundamental importance. Yohannes contends:

> The point of departure in any discussion on hydrological governance must start from a shared recognition of the potential collision between the growing human needs for renewable resources and weakening of regenerative capacity of the region's hydro-ecology (2009: 77).

Taking Yohannes' argument into account, this study focuses on the set goals of the EAC and not on their environmental feasibility in terms of water availability. However, if all projects currently being planned along the Nile banks were to be implemented, the Nile would dry out. The regional and state bodies can speak for themselves and this dissertation can analyse their goals and developments but in all of this, the needs of species other than humans and of the river itself should not be ignored.

1.8 Chapter Outline

In Chapter 1 the study's context was described, pointed out the guiding research questions, explored the purpose and value of this study, established the motivations for doing the research, determined the reasons behind East Africa as a regional complex and delineated the areas of interest.

Chapter 2 will attempt to provide greater insight into the Hydro-hegemony framework. It will do so by first summarising the available IR literature on hydropolitics up until the present, and then by discussing in detail the definition of power as well as asymmetrical power relations in transboundary river basins. The second part of Chapter 2 will focus on the operationalisation power in transboundary waterways and incorporate the region as level of analysis into the Hydro-hegemony framework.

Based on the definitions and conceptualisation in Chapter 2, which provide a sufficient theoretical backdrop for the analysis, Chapter 3 aims at providing a broad descriptive outline of the hydropolitical complexity that makes up the NRB. This is done to establish the nexus

of legal, historical, political, and hydrological factors which form the backdrop to the current hydropolitical situation. Egypt has established hydro-hegemony, i.e. control, over the Nile water flow, through a variety of strategies, notably the *1959 Agreement for the Full Utilisation of the Nile Waters* (henceforth 1959 Agreement) which guarantees Egypt the 'historic right' and legitimacy until today. Yet, the historic weakness of East Africa as a result of colonialisation and proxy wars has been changing since 2007 as the EAC is building up its economic, military, knowledge and hydrological capabilities. Regional cooperation has increased the regional trade volume and funding has gone into infrastructure projects, attracted foreign investments in large-scale projects and as a result the economic, agricultural and dams require an increasing amount of water.

What increased upstream water utilization means for Egypt and the power *status quo*, is the subject of the analysis in Chapter 4. While Chapter 3 will establish the asymmetrical power relationship between upstream and downstream riparians, in Chapter 4 it will be shown that the East African actions upstream have a 'ripple effect' all the way to, and in, Egypt. The analysis is done to show how East Africa's increase in power has affected Egypt's power position, particularly in light of the Arab Spring and the resulting lack of clearly defined foreign policies.

Finally, Chapter 5 will briefly synthesize the findings reached in the previous chapters. Considering the historic instability of East Africa the effect of some tentative future scenarios on the Nile's flow will be advanced. Based on the case study findings some generalisations for other African river basins will be outlined and possible future research areas identified

CHAPTER 2: HYDRO-HEGEMONY: AN ANALYTICAL FRAMEWORK

The purpose of this chapter is to provide the study with a framework of analysis for the power changes in the NRB. The study of transboundary rivers in IR is a fairly new field and has only gained prominence since the end of the Cold War in the early 1990s. The discussion of power in relation to water distribution is even newer. To place this study in the ongoing theoretical discussion, the chapter begins with a brief outline of the academic discussions that have framed the subject. This is followed by a detailed description of the London Water Research Group's (LWRG's) Hydro-hegemony framework and its conceptual pillars, particularly power.

The Hydro-hegemony framework combines power indicators and conflict analysis in river basins and can thereby explain the absence of water wars, even in basins where power is highly asymmetrically distributed. Yet, it is also caught in the state-centric 'territorial trap' which has defined mainstream IR literature for decades. Therefore, a large part of this chapter will discuss the state-centric discourse in IR and strive to get away from that to a regional analysis of East Africa.

The chapter will also introduce Ana Cascao's framework of counter-hegemonic processes, which she bases on the Hydro-hegemony framework. Counter hegemony is rooted in the assumption that power is not static and can be challenged through several counter-strategies, which can be applied to East Africa.

2.1 Hydropolitics in International Relations Literature

The objective of this review is to outline the main positions that have framed the hydropolitical discussions in IR over the last two decades. It is not to be understood as a complete bibliography, such as can be found in Terje Tvedt's *The Nile: an annotated bibliography* (2004) covering both the social and natural sciences. Both the Swedish Water House's (SWH's) literature review of the link between intra-national conflict and transboundary watercourses (2004) since the 1990s and Dahilon Y. Mohamoda's *Nile Basin Cooperation* (2003), offer empirically-oriented and detailed reviews.

While these reviews summarize the political science literature, the UN institutions provide authoritative geographic and statistical information. The United Nations Environmental

Programme (UNEP) published a freely available overview of African water governance and management, the *Africa Water Atlas* in 2010. The Food and Agricultural Organization's (FAO's) *Aquastat* website (http://www.fao.org/nr/water/aquastat/) gathers relevant and up-to-date data on water related domains, focusing on water scarce regions, i.e. also the NRB. Under the umbrella of UN Water, 26 UN institutions and members gathers evidence and coordinate all water-related activities, notably UN Water publishes the World Water Assessment Programme (WWAP) with yearly updated data (UNESCO, 2012).

2.1.1 Water Wars or Cooperation?

The majority of IR hydropolitical literature on the Nile River revolves around the question whether water scarcity[10] leads to cooperation or violent conflict. The Neo-Malthusians argue that Water Wars will break out in transboundary river basins and their writing can thus be placed in the larger post-Cold War literature which links the environment directly to national security concerns (Homer-Dixon, 1999; Klare, 2001 among others). The hypothesis is that growing populations put increasing pressure on freshwater resources in transboundary river basins until it threatens states' national security which will lead to violent conflicts, even wars. J.R. Starr coined the term Water Wars (1991) and thereby laid the foundation for research into transboundary river basins in the early 1990s.

The Water War hypothesis has since been disregarded due to its environmental determinism and lack of empirical evidence for Water Wars (Allan, 1999: i; Yoffé & Wolf, 1999: 199). The paradigm has since shifted to state cooperation (Allan, 2000; Turton, 2005). Functionalists and neo-functionalists argue that while water scarcity can be a *casus belli*, more often than not, it leads to cooperation (Wolf quoted in Doyle, 2006). Yoffé and her colleagues concluded from a worldwide qualitative study that none of the indicators[11] for international water conflicts showed a significant increase in interstate conflict (2003). Cooperation prevailed in most transboundary water resource basins.

As a matter of fact, it emerged from the data that the higher the overall dependency on the watercourse the more states invest in sustainable solutions. Those conflicts that break out are

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[10] Defined as less than 1000 m³ of renewable freshwater per capita per annum (Mohamoda, 2003: 8).

[11] These are: spatial proximity, government type, climate, basin water stress, dams and infrastructure development, and the dependence on water for agriculture (Yoffé *et al.*, 2003: 1110).

low level and do not exclude cooperation; they might serve as a catalyst for cooperation as states realize that water is too important to fight over (Gleditsch *et al.*, 2006).

Whether Water War proponent or opponents are more empirically correct is a matter of discussion and Othieno and Zondi are right to point out that whatever the case may be, governments have used water as justification to go to war (2006: 1). Additionally, authors like Selby (2007), Jacobs (2009) and Allan (2000) have pointed out that both paradigms subscribe to the neo-realist norms of an anarchic international system in which states are the sole actors. The researchers on the cooperation and conflict paradigms merely reach opposing conclusions on the consequences of state interaction.

2.1.2 Cooperation and Power

Researchers then went on to analyse *how* interstate cooperation can best be brought about to create win-win situations (Jägerskog, 2008: 1). The conflict angle in transboundary waterways was relegated to the intrastate level, especially in Africa. John Waterbury framed the question of state-to-state cooperation in the classical prisoner's dilemma scenario and came to the conclusion that only way to build trust between co-riparians is through institutionalised cooperation of the co-riparian states, supported by the international community (2002). The Oregon School established the *Transboundary Freshwater Dispute Database* (TFDD) (Institute for Water and Watersheds, 2012) and found support for Waterbury's theory that institutional capacity along the river basins is the best way to overcome tensions (Yoffé & Wolf, 1999). Juha Uitto and Alfred Duda (2002), working for the Global Environmental Facility, the main funding organisations for the environmental management of transboundary waterways, come to similar conclusions; the key to the sustainable management of transboundary rivers are manageable strategic actions which strengthen trust between countries.

Based on these findings Leif Ohlsson proposed the analysis of water conflicts on two levels; the first order resource being the availability of water and the second order resource the individual and institutional capacities, or abilities, to overcome scarcity (1999). The Maryland school found that cooperation in the past is more likely to induce cooperation in the future and the likelihood of multilateral agreements is much lower than that of bilateral agreements (Conca, 2006). The team around Gleditsch *et al.* (2006) also found support for Allan's 'Virtual Water' (Allan, 1998, 2001) theory. Virtual water is water "embedded in water intensive commodities" which are traded from regions with water surplus to regions

with water deficits, thereby creating a water, food, and trade nexus (Allan, 1998: 1). Finally, the Tshwane School concentrates on Southern African transboundary watercourses but its Hydropolitical Complex (HPC) theory can also be applied to other basins. Anthony Turton argued that not all basins are equal and not all states in the basin are equal (2005). This inequality is rooted in different military strength, economic development, as well as the availability of water, in other words hydropolitical power.

Finally, the LWRG, around Zeitoun and Warner (2006), has further conceptualised power in hydropolitics in the Hydro-hegemony framework. They combine their multidisciplinary backgrounds to tie in engineering, previous IR findings on power indicators, and the conflict and cooperation discourse. Also part of the LWRG is Ana Cascao, who has done groundbreaking work on resistance strategies to hydro-hegemony in the NRB.

To be able to incorporate the many aspects that make up asymmetrical power distribution and degrees of conflict, Zeitoun and Warner (2006) created the Hydro-hegemony framework. First of all, the Hydro-hegemony framework is based on the assumption that "the absence of war does not mean the absence of conflict" (Zeitoun and Warner, 2006: 441). However, there are degrees of conflict. Secondly, for any state to achieve the consolidated control over a transboundary waterway it has to apply "a suite of power-related" tactics (Zeitoun & Warner, 2006: 436).

2.2 Hydro-Hegemony

The LWRG's definition of hydro-hegemony is:

> Hydro-hegemony is the consolidated control on the river basin level, achieved through water resource control strategies (...). The strategies are enabled (...) by the exploitation of existing power asymmetries within a weak international institutional context. Political processes outside the water sector configure basin-wide hydro-political relations (...) (Zeitoun and Warner, 2006: 435).

This section will highlight the different aspects of hydro-hegemony as mentioned by Zeitoun and Warner.

2.2.1 Relative Power

Underpinning hydro-hegemony is relative power. This section will point out what power *means* for NRB and what power *is*.

First of all, *power* is one of the most contested concepts in political science and Zeitoun and Warner refer to the lack of a precise understanding of it as the "classical unresolved issue" in IR (2006: 442). Lukes goes even further by saying that power is by definition contested, "indeed, to engage in such disputes is itself to engage in politics" (1974: 26). It follows that whatever definition of power is applied, it can always be criticized for leaving out some issues. Yet, a conceptualisation of power requires the exclusion of some indicators. For the purposes of this study, the power of one actor *relative* to the other riparian actors determines:

- Who the hydro-hegemon is, as this actor has most power (Figure 2.1, page 26).
- How hydro-hegemony is achieved, i.e. what strategies are applied (Figure 2.2, page 28).
- How hydro-hegemony is challenged through the growing power of other actors (Figure 2.4, page 32).
- What new strategies will be used by the hydro-hegemon to remain in control over the water resources as its power is contested in the basin.

These indicators state what power does but not what it *is*. Antonio Gramsci is one author that has attempted to operationalise power and has hugely influenced the other authors used in this study. Gramsci wrote about Italian society in the early 20th century, to explain the weakness of the communist movement, which was unable to spread due to 'capitalist hegemony' (Selby, 2007: 4). He was jailed for leading the communist party under Mussolini's fascist regime. Gramsci wrote the *Prison Notebooks* from 1929-1935 in Italy, although they were only translated and published in English in 1971. He conceptualised power as more than the use of violence, but as the acceptance of an order:

> This same group [a subordinated group] has, for reasons of submissions and intellectual subordination, adopted a conception which is not its own but is borrowed from another group (quoted in Lukes, 1974: 47).

As a matter of fact, this kind of power represents the exact opposite of violence. Thus power over masses is made up of both coercion and oppression; it entails legitimacy, leadership, ideas, knowledge, and consent (Cascao, 2008: 14).

Neo-Gramscians, like Steven Lukes, Robert Cox, and Ana Cascao from the LWRG, built their theories around this insight about power. Only four years after the first English

translation of Gramsci's work was published, Lukes' book *Radical Power* incorporated Gramscian insights by conceptualising 'group into action', observable behaviour, and non-action, as well as compliance with the *status quo*. Robert Cox (1987) has been rudimental to transferring Lukes' three-dimensional approach to the international sphere. Cox's *Historic Materialism* focuses on the particularities of eras and the social construction and organisation of production (O'Brian & Williams, 2004). Cox is influenced by constructivist tenets but his main focus is the historical representation of power constructs at different levels. Ana Cascao was the first to draw on Lukes' (1974) and Cox's (1987) multidimensional conceptualisation of power and apply it to the hydropolitical context (2008).

The first dimension of power is the state's actual ability to mobilize capabilities such as military might, economic strength, political support, and inherent geographic factors. It is the 'hard' power of states (Nye, 2005) and focuses on actualised behaviour and their "productive and destructive potentials" (Cox, 1987: 98). In neorealist terms, this is the only measure of state power, yet non-actions also contribute the *status quo*.

The second dimension refers to control of the institutionalised 'rules of the game'. The *status quo* defenders have the power to decide which items will reach the agenda and which "*decisions* are prevented from being taken on *potential issues*" (Lukes, 1974: 20, emphases included). At the international level this is also referred to as a state's bargaining power (Zeitoun & Allan, 2008), which includes the ability to 'mobilise bias' and enforce

> a set of predominant values, beliefs, rituals, and institutional procedures that operate systematically and consistently to the benefit of certain persons and groups [or states] at the expense of others (Bachrach & Baratz, 1970 quoted in Lukes, 1974: 17).

This tactic can be supported by coercive measures like threatening sanctions, i.e. to confront other states with compliance or non-compliance in formal and informal institutions (Lukes, 1974: 17). In addition, incentives can negotiate the prevailing world order through concessions and compromise, while convincing weaker actors that they should accept 'universal' values (Cox, 1987: 99).

The third power dimension alludes to the ideological dimension of power, whereby an order is internalized and does not get called into question. Lukes explains that it is the power exercised of A over B by

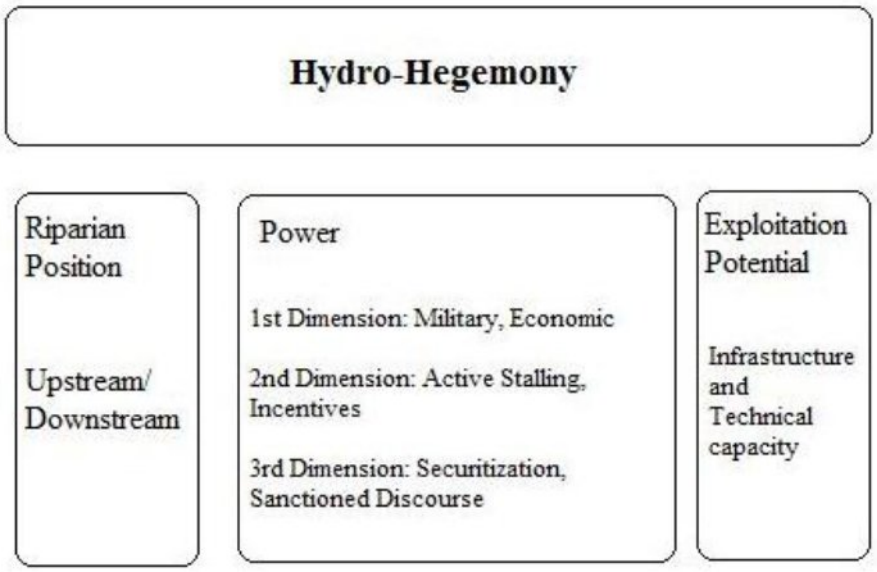
> influencing, shaping and determining his very wants (....) to prevent people, to whatever degree, from having grievances by shaping their perceptions, cognitions and preferences in such a way that they accept their role in the existing order of things (1974: 23).

This power can be exercised by social groups and states alike. It can be done, for example, by securitizing issues and thereby putting them outside the political realm.

On the world level hegemony is achieved when one actor dominates all three power dimensions. In case of hydro-hegemony three factors support a state's hydro-hegemony: i) its riparian position, ii) its relative power, and iii) its exploitation potential (see Figure 2.1).

Figure 2.1 depicts the pillars that support a state's hydro-hegemony according to Naff and Matson (1984) and has been adapted by Zeitoun and Warner (2006: 451). The first pillar (from left) signifies the geographic position in the basin, i.e. upstream or downstream. Pillar two represents Lukes' power conceptualisation and pillar three denotes the state's ability to exploit the water resources it has secured. The third column includes the exploitation potential which means the actual ability of states to utilise the water. The relative size of the pillars reflects the weighing of factors in the framework. Power, the middle pillar, is thus the most important determinant of hydro-hegemony.

Figure 2.1: Pillars of Hydro-Hegemony (Naff & Matson, 1984)



Analogously, the riparian position is inherent to the riparian state as it cannot be altered. Power, however, is relational and depends on the actions of each riparian. The final hydropolitical situation along a transboundary river basin is the result of all the actors' processes and actions combined (Cascao, 2008: 17). Power explains why states, although not violently forced to do so, comply with the *status quo* of unequal resource distribution (Zeitoun & Warner, 2006: 437). This includes both − the actual power and the potential power, its possession and its exercise (Turton, 2005; Lukes, 1974: 12)[12]. Moreover, power provides the only explanation as to why the most downstream state manages to establish hydro-hegemony over transboundary water resources as is the case in the NRB where Egypt has established itself as hydro-hegemon. Finally, exploitation potential is neither fixed nor relational. It depends on the ecosystem and water flow. To illustrate, all riparian states could have an equal amount of technical capabilities but could soon run out of water. In most cases, however, exploitation potential is closely linked to the power indicators.

2.2.2 Hegemonic Strategies and Tactics

The LWRG's framework assumes that the hydro-hegemon wants to maintain its consolidated control over the transboundary water resources and to do so, will use various water resource control tactics and strategies. Resource capture refers to the unilateral acquisition of transboundary water resources, affecting the quality and quantity of water (Zeitoun & Warner, 2006: 444). By utilising water, the hydro-hegemon decreases the other riparians' ability to do so and creates 'facts on the ground'. Containment signifies engaging the other riparians to achieve compliance through coercive means; integration of non-hegemons through incentives can be a strategy to prevent them from 'developing successful counter-strategies' (Cascao, 2008: 16).

According to the Hydro-hegemony framework, the hydro-hegemon uses four water resource control tactics: coercion, utilitarianism, norms, and ideology (Zeitoun & Warner, 2006: 444-446). Coercion can be achieved through military force, threats, and covert action. An example of covert action could be the support of intra-state rebel groups which weaken the central government. Utilitarian mechanisms can be trade incentives, diplomatic recognition, military protection, and shared interest projects meant to ensure positive compliance with the

[12] *Puissance*, potential power, is the possession of a nuclear bomb which lends power, but not in an actualised sense such as *pouvoir* which is the power to stop the rocket from being launched (Zeitoun and Warner, 2006:442).

hegemon. The most stable regime is achieved through normative tactics (Zeitoun & Warner, 2006: 442) which ensure the preservation of the *status quo* by constructing a 'natural order of things'. Treaties are an example of this as they often enshrine existing power inequalities which allow the hegemon to impose compliance due to the absence of an enforcer on the supra-state level. Ideological compliance shapes the perception of the transboundary water resource. Securitization (Buzan & Weaver, 2003), knowledge construction, and sanctioning discourses are used.

Depending on the water resource control strategy and tactic chosen by the hydro-hegemon, its hegemony can be perceived positive, neutral, or negative. Positive leadership can lead to the equitable distribution of the resource, whereas negative hydro-hegemony entails an increasingly unequal resource distribution. Since these are subjective meanings, whether hydro-hegemony is perceived positively, neutrally or negatively, depends on each actor.

Figure 2.2: Water Resource Control Strategies and Tactics (Zeitoun & Warner, 2006: 445)

Using Figure 2.2, Zeitoun and Warner (2006: 445) demonstrate how water resource control tactics and strategies fit into the wider hegemonic control consolidation process. This can be achieved through the abovementioned strategies, unilateral action, coercion, or cooperation.

> Within the context of highly asymmetrical power relations, the distribution of water is largely determined by the strategy pursued by the hegemonic power (Selby, 2007: 2).

International support, financial mobilization, and geo-political factors underpin the hydro-hegemon's position and give "more powerful states its competitive edge" (Zeitoun & Warner, 2006: 449). On the bottom axis Zeitoun and Warner identify those factors which are outside the hydro-hegemon's influence but, nevertheless, play a part in securing the consolidated control over transboundary water resources.

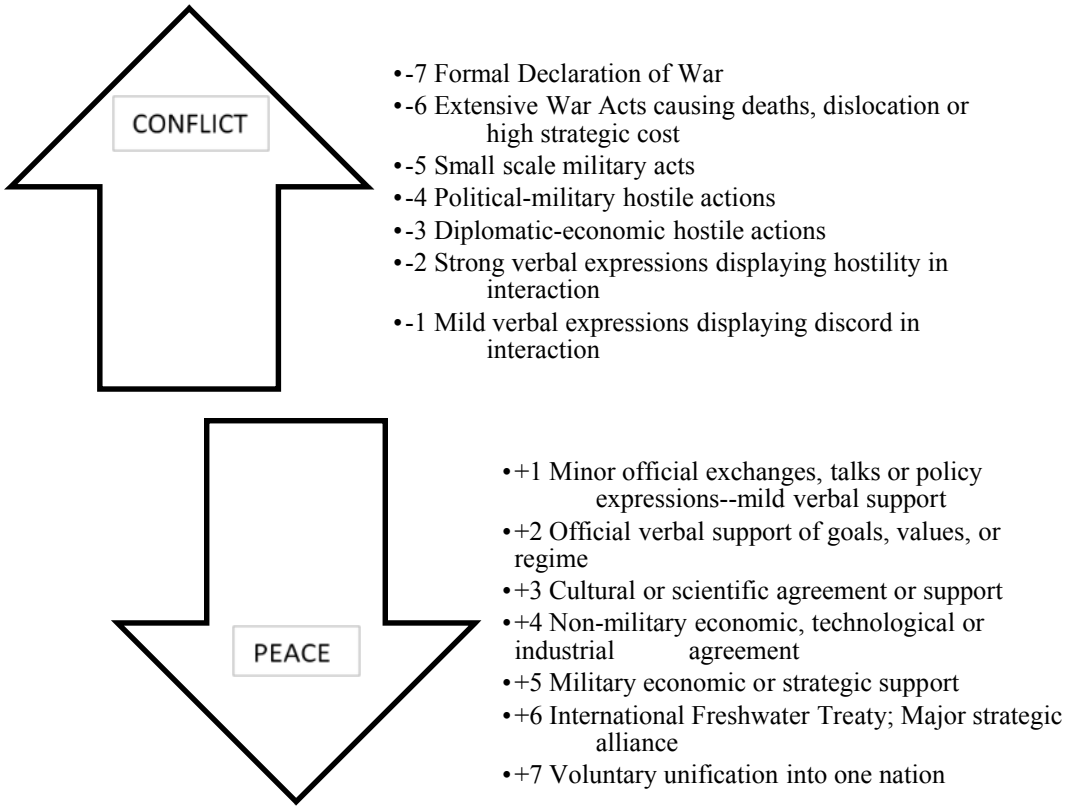
Since the hydro-hegemon is most powerful, its tactics and strategies will determine the nature of the interaction in the basin. At one end of the resource control scale are genuine competition and at the other full cooperation. Most river basins lie somewhere in the middle; a degree of sharing exists, while consolidated control over contested water favours the hydro-hegemon. Different kinds of interaction emerge among the co-riparians depending on the type of control tactic and strategy. Shared control leads to a more cooperative environment than contested control which makes the relationship more competitive and anarchic.

2.2.3 Intensity of Conflict

As was mentioned above, a basin must not be at war, yet this does not mean that it has achieved consolidated peace. The SWH compared several definitions of conflict and condensed it to "a social situation in which at least two actors try, at the same time, to gain access to the same set of resources". This is the definition of conflict which will be used in this study (SWH, 2004: 2). Importantly, conflict does not need to be violent which implies that there is a scale of conflict and cooperation (Azar, 1980). The Oregon School translated this to the basin level.

The Water Event Intensity Scale by Yoffé *et al.* (2003) (Figure 2.3) analyzed historical indicators from 1948-1999 on water conflict / cooperation patterns and came up with a relational scale from -7 to +7. The data includes events between two or more riparian states. The scale aims at taking account of the many degrees of conflict that define a basin situation.

Figure 2.3 Degrees of Conflict (Yoffé *et al.*, 2003)



As mentioned above, Egypt's hydro-hegemony could be one of the social institutions averting armed conflict. Since hydro-hegemony is exercised through convincing other actors to follow its lead implicitly, violent defiance of the hydro-hegemon is usually not an option (Frey, 1993; Green Cross International, 2000; Zeitoun & Warner, 2006).

2.3 Counter Hydro-Hegemony

Shapland (1997) and Cascao (2005) were the first researchers to conceptualise and operationalise counter-hegemony. Ana Cascao is one of the academics involved in the LWRG and bases her theory of counter-hegemony on Zeitoun and Warner's Hydro-hegemony framework. Using the same building blocks of power, she understands hydro-hegemony and conflictual relations within their framework but expands on it.

Due to its neo-Gramscian roots, the Hydro-hegemony framework acknowledges that change in relative power is possible but does not conceptualise the processes involved. The furthest

Zeitoun and Warner go to acknowledge hydro-hegemonic processes in their paper is by saying:

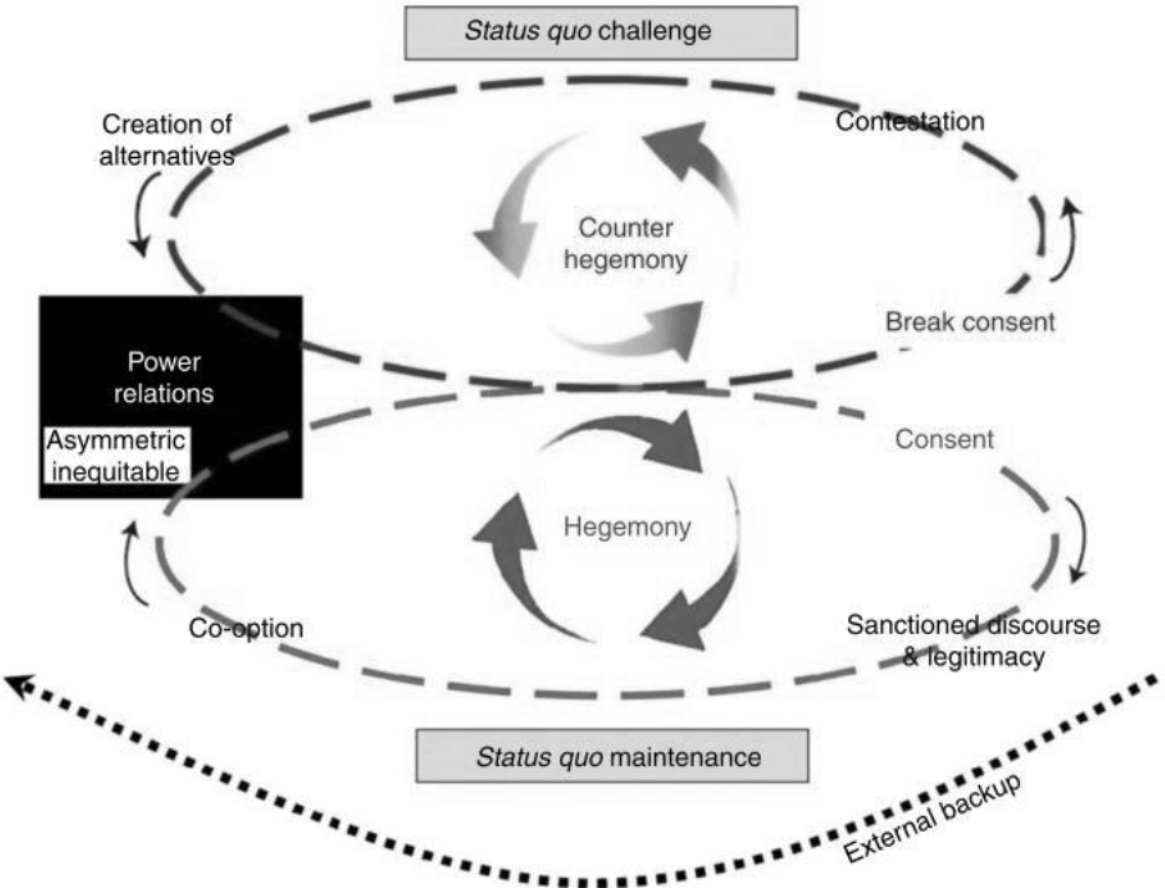
> The non-hegemonic state will resort primarily to its agenda-framing (second dimension) power. Such power, as we have seen, includes recourse to morality and international law, de-securitization, issue linkage, economic development, alternative funding sources, negotiations, and generation of positive-sum outcomes (2006: 454).

Zeitoun and Warner's analysis of transboundary river basins results in two mechanisms; firstly, the hydro-hegemon determines the nature of the struggle (2006: 452) and secondly, power is a zero-sum game. Since power is asymmetrically distributed in a hydro-hegemonic setting, the strategies of resistance and counter-resistance are determined by the '*status quo* defender'. Depending on the nature of interaction, whether it is positive, neutral, or negative, non-hegemons are forced to react differently.

By the same token, since water is a finite resource, greater power and thus greater control over the water means that power growth in non-hegemons takes power away from the hydro-hegemon. By way of example, Egypt depends on the Nile for 95% of its freshwater supply. The more other countries in the NRB are able to mobilize financial resources and utilise the water resources of the Nile, the less power Egypt can exert. In case of the Nile, Egypt's dependency is enhanced by its downstream position. Other than by its power and water resource control strategies, Egypt cannot influence the water flow it depends on (Figure 2.1, page 26).

Counter-hegemony is a process whereby the consent of non-hegemons with the hegemon is breaking up and an alternative regime is created. In postulating the concept of counter-hegemony, Cascao assumes hegemony to be in place, against which non-hegemons react. Consequently, there are two phases of counter-hegemony: the reactive phase, wherein the non-hegemon resists, and an active phase which is defined by the creation of an alternative order. It is the latter that goes beyond a mere challenge to the hegemon but is indeed counter-hegemonic; only the creation of an alternative order warrants the term 'counter', otherwise actors merely challenge the existing order (Warner, 2007).

Figure 2.4: Abstract model of hegemony and counter-hegemony (Cascao, 2008: 16)



The first step of counter-hegemony is defining the object of resistance. This is followed by the active phase of counter-hegemony: challenges to the current regime, contesting the legitimacy of the hegemon and finally, if successful, the creation of a new *status quo*.

In her 2009 paper, Cascao applied her counter-hegemonic framework of analysis to the NRB and critically analysed Ethiopian counter-hegemonic processes against Egypt. This was a groundbreaking study as she provided the first conceptual and empirical backdrop against which theoretical power changes in a transboundary river basin could be analysed. She showed that consent and contestation to hegemony coexist, since all types of hegemony are based on consent and coercion (Cascao, 2009). Consequently, all riparians have agency and influence over their hydropolitical situation.

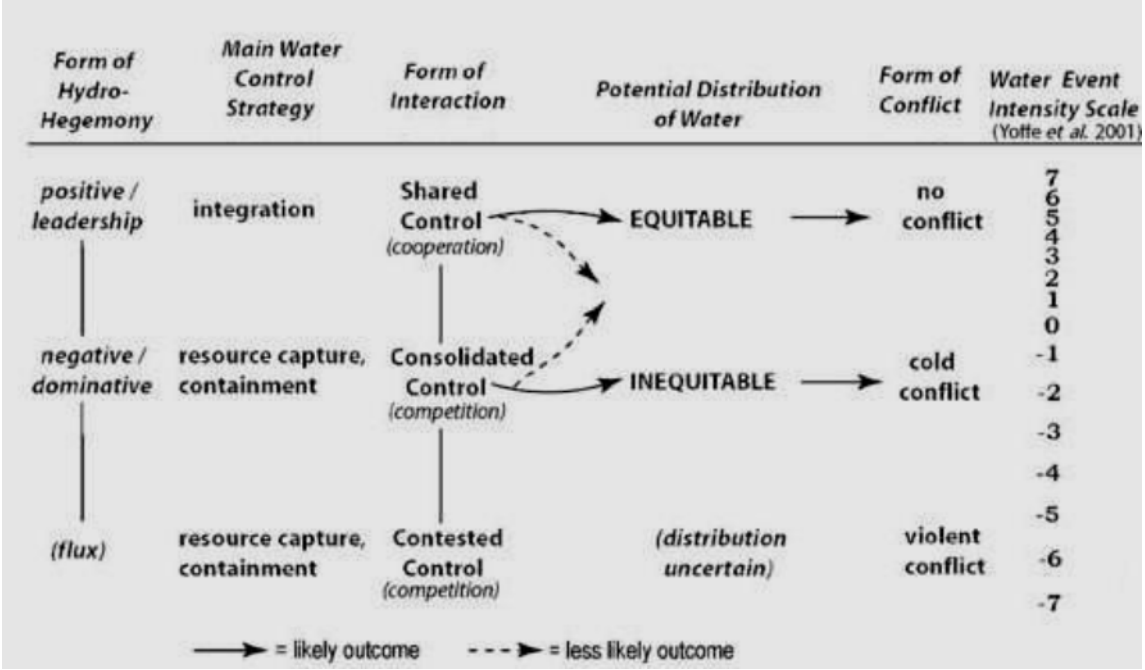
She identified seven counter-strategies: i) reactive diplomacy, ii) active diplomacy, iii) cooperation, iv) mobilising international funding, v) the construction of expertise-based

knowledge, vi) discourse alternatives, vii) claim on legal principles. As will be shown in the fourth chapter of the present study, these counter-hegemonic strategies can also be applied to East Africa. East Africa aims for equitable water distribution which would require a redefinition of the current *status quo*. But East Africa has gone beyond the reactive phase of counter-hydro-hegemony in the 1980s; it is actively creating an alternative regime through the multilateral LVBC and, notably, the CFA. It is also building dams with new sources of funding like the Export-Import (EXIM) Bank of China. East Africa's multilateral, equitable, regionalised approach to water distribution could undermine Egypt's access to water, as well as its legitimacy as hydro-hegemon. The consequences of these counter-hegemonic processes for Egypt are the focus of this study. The actions of East Africa force Egypt, if it wants to maintain the *status quo*, to change its strategies and tactics (see Figure 2.2, page 28, for a representation of Water Resource Control Strategies and Tactics).

2.4 Strengths of the LWRG's Framework

Having sufficiently described the theoretical framework used in the present study, this section will look at the two main strengths of the Hydro-hegemony framework. Firstly, it draws different theoretical discussion together and unites them into one analytical framework (Figure 2.5, page 34).

Figure 2.5: The Hydro-hegemony framework: Bringing theories together (Zeitoun & Warner, 2006: 453)



According to Selby, the Hydro-hegemony framework provides a 'powerful and corrective' input to the existing hydropolitical literature (2007: 2). Relative power is a potent way to explain why Egypt, a downstream state, has been able to consolidate control over water resources and simultaneously prevent violent conflict. When Zeitoun and Warner first published the Hydro-hegemony framework in 2006, power imbalances between co-riparians were barely discussed and had been lost in the discussion around conflict and cooperation (Zeitoun & Warner, 2006: 436).

Secondly, the theory allows for change in the *status quo,* since power is not an intrinsic quality but relational. Gramsci was the first to point out that hegemonic power is founded on material capabilities, ideas and knowledge construction, and generates non-coercive consent. Hegemony is more stable than pure dominance, precisely because it is rooted in consent. His theoretical foundations have since been transferred to the international level by Lukes and Cox, both of whom consider power relational to the other actors. Consequently, power is negotiable and can change over time.

2.5 Criticism of the LWRG's Framework

Despite the strengths of the Hydro-hegemony framework, some vital criticisms have also been directed at LWRG's operationalisation by authors like Selby (2007) and Jacobs (2009). In an incomplete and unpublished[13] response to Zeitoun and Warner's 2006 publication, Selby criticizes the Hydro-hegemony framework based on two conceptual weaknesses.

Firstly, Zeitoun and Warner draw a conceptual line between dominance and hegemony. Selby (2007) posits that they do not clarify whether dominance is in fact the opposite of hegemony, since it is based on coercion, or whether it is a facet of hegemony. Based on the tactics available to a hydro-hegemon, it would appear that dominance is a facet but the very definition of hegemony as the consolidated control beyond coercion is at odds with this interpretation. For the purpose of this study, the function that hydro-hegemony fulfils, namely the consolidated control over water resources, is more important than its exact definition. Nevertheless, for the purpose of clarification, it is necessary to state that coercive measures alone are insufficient to achieve consolidated control over transboundary water resources. Only in conjunction with non-coercive tactics do coercive measures result in successful control mechanisms.

Selby's second criticism directed at the Hydro-hegemony framework mirrors ongoing positivist vs. post-positivist discussions in IR literature. According to Brown (2006), as well as Dunne and Schmidt (2008), the benchmark definition of state power has long been set by positivist realist theorists who continue to dominate mainstream IR theory. According to realist scholars, anarchy governs the international system and is moderated only by state power (Keohane, 1984). Although the distribution of material capabilities establishes a balance of power, it can never change the underlying anarchic systemic structure. The self-help principle leads to situation where states are mainly concerned about their own survival. War is thus a constant feature of international relations (Carr, 1939; Morgenthau, 1978; Waltz, 1979; Gilpin, 2002). Realism assumes absolute territorial sovereignty, division between domestic and foreign politics, and "the state as prior to and a container of society" (Agnew, 1994: 54).

Realist assumptions have been contested by various schools of thought. The crucial difference between positivist and post-positivist understanding of IR is about the constructed

[13]Confirmed in a personal e-mail by Mr. Selby

nature of knowledge (Jacobs, 2009: 34). For positivist theorists knowledge of state, borders, and war is an empirical reality, regardless of time and space. By contrast, critical theorists consider these malleable 'facts' as derived from the state/society complex (Cox, 1987). Robert Cox, one of the chief critics of critical IR theory, declares that

> Neorealism puts the accent on states reduced to their dimension of material force and similarly reduces the structure of world order to the balance of power as a configuration of material forces (1987: 102).

Much of the literature on hydropolitics has been described as 'reactionary', precisely because it is caught in the territorial trap, namely unquestioning acceptance of current political state boundaries (Jacobs, 2009: 18). Instead of creating its own level of analysis it emulates mainstream IR theory.

This criticism of the hydropolitical literature also applies to the Hydro-hegemony framework. Selby notes that despite their neo-Gramscian claims, Zeitoun and Warner's framework is premised on a state-centric worldview; referring only to the inter-national aspects of hydropolitics "and in doing so ignoring both its national and trans-national dimension" (2007: 2). Selby notes that in the Hydro-hegemony framework, 'hegemons' are always states, the results are only felt by states and conflicts are between state actors. He applies the above-mentioned post-positivist criticisms to the Hydro-hegemony framework. His criticism is based on empirical evidence found in hydropolitical complexes and the *era of globalisation* in general.

The mainstream realist distinction between an anarchic world order and a stable national environment does not reflect the empirical reality of East Africa (Selby, 2007). Particularly in post-colonial Africa, observers have pointed out the arbitrary nature of territorial states (Selby, 2007). Integration of economic production and political structures shape East Africa's present and future; the fast-tracked integration of the EAC being only one example of eroding national sovereignty which positivists are unable to address adequately. Additionally, Clapham argues that many governments in Sub-Saharan Africa are indistinguishable from so-called rebel movements, the only difference being that state governments are recognized by the UN (1998). Furthermore, genocide, repression and civil war – all features of the East African political landscape − form part of the state formation process following independence. These arguments therefore require researchers to go *Beyond Hydro-Hegemony* (Selby, 2007).

Other authors like Giordano and Wolf also criticize the Hydro-hegemony framework from a more environmentalist perspective (2002). Because water is by its nature fluid and non-static, a realist perspective cannot explain the processes taking place on transboundary waterways. The Nile water flow varies significantly from season to season and changes course in unpredictable ways. Although geographic factors, like the continued water flow, are usually considered to be a given, the Nile River challenges these 'static facts', for example through high water flow variations.

Burchill posits that "a single theory cannot, by itself, completely identify and explain all the key structures and dynamics in the international system" (1996: 22). Taking heed of the criticism against Realism, this study expands the Hydro-hegemony framework by applying it to the regional level of analysis. To recapture, the criticism included chiefly the state-centric approach to IR and the resulting anarchic world order that follows.

The criticism against the scale of conflict and cooperation is directed against its neo-realist / liberal assumption of an essentially anarchic world order. At the extreme conflictual end of the spectrum this is reflected in a Water War perspective while at the cooperation side, a neo-Liberal institutionalist perspective keeps potential warfare at bay. Jacobs objects that this portrayal of water resource events limits the options to two results − war or institutional cooperation (2009). Different degrees of cooperation and conflict may exist simultaneously over various issues regarding transboundary water resources (Allan, 2000). "The type of cooperative strategy negotiated should therefore be unique to a particular context" (Jacobs, 2009: 33). Negotiators and policy-makers should take her criticism into consideration when approaching transboundary watercourse policy in the future.

2.6 Justification for a Regional Analysis of East Africa

Conventionally, as mentioned before, political scientists consider the state to be the unit of analysis (Gerring, 2007: 19). The five states that are situated in the LVB are actors with a degree of agency within the unit itself, but they are not the subject of the present analysis. There are five primary reasons as to why this study uses a regional analysis.

Firstly, the colonial Scramble for Africa resulted in state boundaries which were meant to benefit the colonial powers and yet, they have remained in place and are still being maintained today. More importantly, the Europeans were unfamiliar with the region and relied on geographic features and latitudes in demarcating the boundaries of territories. Yet

mountain ranges were often larger than expected and fell between two spheres of influence, so that new disputes would arise. The 30°E meridian was used as a demarcation but on the ground it was harder to measure than on the map. In their Scramble for Africa the rivalry between European states sometimes led to grotesque forms of land division as is exemplified in present-day Rwanda and Burundi.

The Berlin Conference (1884) assigned Ruanda-Urundi to German East Africa (*Deutsch Ostafrika*) alongside Tanganyika (now Tanzania). Yet it took another eight years before the first European ever set foot in the territory. Only in 1892 did Oscar Baumann map the territory for the first time, at the same time informing the reigning king that his territory had been under German governance for eight years already (Kigali Memorial Centre, 2011; Chrétien, 1968: 55). At Berlin, borders were drawn up based on sketchy geographical knowledge and due to the "hegemony of linear boundaries" (Médard, 2009: 276) and neither geographic nor demographic realities were deemed significant. The Nile River was used to separate regions under colonial administration, even if the kingdoms' borders originally did not reach the banks of the Nile (Médard, 2009: 276). While this is an example of the absurd situations which shape the continent until today,

> not all the boundaries of Eastern Africa were arbitrarily drawn. Detailed surveying was used to define some boundaries, and there are some cases were considerable efforts were made to avoid dividing communities or to guarantee rights to water (…). (Okumu, 2010: 285).

In a few cases, local communities were able to petition the colonial administration over territory. This was the case in 1924 when a petition by the Kissaka district population to the Permanent Mandates Commission of the League of Nations led to the integration of this district into Rwanda. However, where the colonial administrative bodies had strategic interests, the local populations were ignored (Okumu, 2010: 285). The British 'obsession' to control the Nile resources had a large effect on the borders of Tanzania-Kenya-Rwanda-Uganda (Okumu, 2010: 282) and Lake Victoria is divided as a result of this. Indeed, the British paid meticulous attention to the exploration and mapping of the LVB under the Colonial Survey Committee. Nevertheless, in more far-flung places where few or no British interests prevailed, the colonial administration had no need to survey the land and maps were highly inaccurate until the late 1950s when East African states became independent and knowing the exact border of the newly sovereign country became a political priority. The

artificial and imperial boundaries that continue to define East African borders highlight the fact that state borders are essentially, and specifically in East Africa, rooted in British colonial interests.

Unfortunately, besides its British colonial past, East Africa also shares a history of regionalised conflicts. The region as whole has been defined by civil conflicts since independence. In the 1960s massacres took place in Rwanda and Zaire, now the DRC, and during the 1970s violent clashes spead across Burundi and Uganda, which continued into the 1980s and culminated in the proxy wars in the 1990s across the region (Médard, 2009: 278). Probably the most infamous of these conflicts was the Rwandan genocide which is closely linked to unrest in Burundi and the continued violence in the eastern part of the DRC. In course of the DRC violent conflict the Eastern Congolese territory became a threat to Ugandan domestic security. The Lord's Resistance Army (LRA) traversed freely between the countries and eventually the Ugandan government 'invaded' the DRC's sovereign territory. Médard points out that this was actually a reinstatement of an ancient Ugandan 'frontier' (2009: 279).

These interconnected conflicts are often cited as examples of Buzan's Regional Security Complex theory (RSCT) (Buzan, 1991; Buzan *et al.*, 1998; Buzan & Waever, 2003). According to Buzan, the term 'security complex' refers to the interdependence of both shared and competing interests and reflects the shifting patterns of conflict and cooperation over time (Buzan & Waever, 2003: 81). In addition to perceived amity and enmities, the security complex binds states together into an RSC. The Great Lakes region has long been "convulsed with genocide, civil wars[14], inter-state conflict and flawed democratic transition" (Lunn, 2006: 1). More than its shared colonial history, what shows that East Africa is indeed a regional complex is its growing institutional regionalism and dependence on the neighbouring countries for domestic security. On the micro level, porous borders have allowed rebel groups (or freedom fighters), refugee flows and traders to walk back and forth between countries, undetected by the state. Other common security concerns are cattle rustling, drug trafficking, human trafficking, gun smuggling, and auto theft which feature in the economies of the border areas (Okumu, 2010: 280).

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[14]In this dissertation armed conflicts are defined as less than 1000 battle-related deaths per year, while wars claim more than 1000 lives per annum (UCDP, 2013).

The overwhelming intersubjective understanding in the media and in international organisations of states as the international actors is only slowly being replaced by a more diversified arena of actors – regional actors like the EAC Secretariat and well-known NGOs, like *Doctors without borders*. Constructivist scholars are challenging these notions. On the radical side of the constructivist spectrum, Kratochwil (2000) disregards the claim 'scientific realism' and does not accept state borders as a reality even to the slightest degree. Most constructivists are located in the middle and accept a degree of 'minimal foundationalism', so that

> most Constructivists argue that consensual standards (i.e. generally accepted norms and values) must govern the derivation of plausible interpretations of social reality (Jacobs, 2009: 59).

This study also accepts the premises of minimal foundationalism of the intersubjective understanding of states as "self-organising units to which it is possible to attribute identities and interests" (Jacobs, 2009: 59).

As was shown above, the state, and particularly 'nationalism', is artificial constructed, or an *Imagined Community* (Anderson, 1983). Particularly in sub-Saharan Africa, where the colonial powers imposed borders, the state is fluid and borders porous. Ethnic groups and clans sit on both sides of the border and often the line in the sand that is the official border is not reflected in local realities.

Based on the above argument, Africanist critics argue that due to its state-centric and structure-oriented conceptual foundations, mainstream IR theory is not applicable to Africa (Brown, 2006: 121). Brown (2006: 123) cautions against using IR theory as an exact reflection of reality and reminds researchers that it is merely a framework. At the most basic, IR is about "relations between politically-organised societies" (Brown, 2006: 125) which opens the international system up to a whole array of actors. States control their territory and the monopoly of power to varying degrees but they represent a form of political organisation, also in sub-Saharan Africa (Brown, 2006: 133). Brown argues that taking the state out of political analysis also means taking agency away from post-colonial African states (2006: 128). In 1964 African leaders, after all, decided to adopt Resolution A/Res. 16(1) which states that the Organisation of African Unity (OAU) member states "respect the borders existing on the achievement of national independence". This sentiment was confirmed by the African Union (AU) in their Constitutive Act which became effective in 2001.

In the case of East Africa, the intersubjective understanding of statehood seems twofold; *de facto* and *de jure*. In the case of the Republic of South Sudan, independence from Sudan followed decades of intrastate conflict. In January 2011 a referendum was held, in which over 98% of Southern Sudanese supported the notion of an independent state. On the 9th of July the official independence ceremony took place, enshrining the *de facto* government. Three days later, the UN General Assembly welcomed South Sudan as 193rd Member State, confirming its *de jure* statehood as South Sudan was welcomed with the words

> Today we are firmly entrenching South Sudan in the community of nations in the same way as other Member States with the same rights and responsibilities (UN General Assembly President, Mr. Deiss, 09.07.2011).

Statehood and sovereignty clearly matter to the Southern Sudanese people. The state should neither be disregarded as a unit of analysis, nor should it remain the automatic level of analysis. The challenge of balancing national sovereignty and hydro-interdependence is

> exacerbated by the imposition of international borders in river basins which generate a sharp disconnect between the politically constructed notion of sovereignty and the physical hydrology of rivers (Alam *et al*, 2011: 426).

In case of the LVB the regional, as opposed to state-based, analysis is necessary to give account of resource distribution policies. A case study that would focus on, for example, Uganda would miss out on the larger regional picture because

> the specificity of this region has (…) to do with (…) a common cultural background of neighbouring societies. The region was culturally related and yet politically divided for centuries (Médard, 2009: 278).

Under the EAC, the region is now growing together as "One People, One Destiny". If states are "obvious social and political constructs, making use of language, culture, identity and geographical landmarks" (Médard, 2009: 281) to create common identities, then so could a region. Similar dances, Kiswahili as *lingua franca,* and other common cultural goods are prevalent throughout East Africa. The EAC pays tribute to this shared cultural connection and brings the communities of the five Partner States together.

The EAC's *Protocol of Sustainable Development of the Lake Victoria Basin* from 2003 furthermore shows that the EAC, in addition to paying tribute to the common historical and cultural factors, also governs shared resources, specifically Lake Victoria.

Yohannes makes the compelling argument that most IR theory treats the environment as a separate sphere and, at most, pays lip service to it. States and regional organisations are considered agents and nature open to be endlessly exploited (2009: 77). Consequently, the environment, and especially freshwater biodiversity, is sacrificed for economic development (Giordano & Wolf, 2003). Yohannes argues that in hydropolitics this needs to change. The environment is an integral part of the analysis and possible solutions hinge on its limited availability (Yohannes, 2009). For the purpose of analysing hydropolitics, the environmental resources limit economic development. As part of the Millennium Development Goals (MDGs) water has been recognized as a major inhibitor of economic and social development since 2000. This is maybe the strongest argument outside the theoretical IR realm that compels researchers to consider hydropolitics on a larger scale.

Lastly, and not to be neglected in a hydropolitical analysis, the East African countries are united by a shared ecosystem. Although rivers can both separate and unite regions (Médard, 2009: 276), the riparian states are united in a "complex hydrological feedback loop" (Alam *et al.*, 2011: 425). The Nile River, like all rivers, consists of more than the visible surface water. The tributary waterways which contribute to the water flow are often rivers in their own right, such as the Kagera River[15] which feeds Lake Victoria and is considered the most upstream tributary of the Nile River. In total, this water system of surface and groundwater is called the NRB and is a much larger area than the Nile River itself. Geographically speaking a river basin is a

> topographically delineated area drained by a stream system that is, the total land area above some point ... [including] the entire river and its tributaries (Gleditsch *et al.*, 2006: 366).

The extent and cross-border reach of the LVB is illustrated in Map 1.4 (page 11).

[15]The Kagera Basin Organisation (KBO) consisted of Burundi, Rwanda, Tanzania and Uganda but was dissolute in 2004 (Jacobs, 2009).

A watercourse is defined as a "system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus" (UN Draft Convention 1997: Article 2). The UN's 1997 Draft Convention on the *Law of the Non-navigational Uses of International Watercourse* (henceforth 1997 Draft Convention) also recognises that international watercourses are situated in different states. It is a geographic definition of the term which has been codified by the 1997 Draft Convention. The definition of a watercourse closely resembles the definition of a basin in geographical terms. However, "The basin is frequently used as a spatial unit for socio-economic management" (Gleditsch *et al.*, 2006: 366). In other words, river basins have more than a geographic aspect; they also serve as analytical spaces. Basin and sub-basins form their own socio-economic units and watercourses but are connected:

> Surface water flows across basins and sub-basins unite areas by providing common water sources, aquatic habitats, transportation networks, quality water, hydropower potential and other shared goods and services (UNEP, 2010: 37).

Rivers can separate by posing obstacles to human mobility and communication. For example, the Nile confined the conflict between the Ugandan government and the LRA to northern Uganda because the LRA was incapable of crossing the river and thus carrying the conflict South (Médard, 2009: 276). More subtly, however, transboundary water resources unite the peoples, species and plants living in one interdependent, often invisible, ecosystem.

2.7 The Theoretical Framework

The chapter began with an overview of hydropolitics in IR and two discussions, namely of interstate water wars and cooperation, emerged from the hydropolitical literature review. Depending on the author, it is argued that water scarcity may lead to either interstate conflict or cooperation. Since empirical data, from several authors, does not support the simplistic assumption that water scarcity equals violent war, it has been argued that the cooperation paradigm provides a more useful framework of analysis on transboundary watercourses. This led researchers to delve into the best way to encourage cooperation between states to create win-win situations, whereby water scarcity would not be compounded by competing national interests. The foremost mechanism that emerged was the liberal institutionalisation of water governance, in the form of treaties and basin-wide organisations. Additionally, at the end of

the last decade, some authors have started to criticize the overall positivist approach in the hydropolitical literature, based on its state-centric and anarchic epistemological assumptions.

The other conclusion that can be drawn from the literature review is that the positivist analysis of hydropolitics is no longer viable. Academics in the field of IR have discussed the merits and demerits of a state-centric analysis exhaustively and it seems that, like the other levels of analyses, it depends on the subject of analysis and the relevance of the subject under discussion. Specifically in East Africa, the regional level of analysis seems much more appropriate due to political, environmental, and historical factors.

The second conclusion that can be drawn from the discussion is that access to water and control over transboundary water resources largely hinges on relative power indicators. These have been derived from the influential Antonio Gramsci that laid the foundation for power analysis based on coercive (non-action) and consensual (actualised behaviour) control tactics and strategies. The LWRG has transferred these meanings to the basin level. The ultimate expression of power is in form of the hydro-hegemon who has consolidated control over transboundary watercourses through relatively greater power (Zeitoun & Warner, 2006).

From Ana Cascao's work, it was extrapolated that hydro-hegemony must not be uncontested (2008). Non-hegemons apply reactive and active strategies in the effort to change the *status quo*. Undermining the hydro-hegemon's legitimacy, mobilising funds and actively pursuing diplomatic means to change the current regime, are just some of the strategies which will be analysed for the East African region.

The present chapter has established the conceptual pillars of this study, which will be used in the next chapter, where the Egyptian hydro-hegemonic position will be described, and East Africa counter-hydro-hegemonic strategies will be outlined.

CHAPTER 3: POWER SHIFTS

The third chapter provides a detailed account of the changing East African power relationship *vis á vis* Egypt. The *status quo* is easily discerned and has repeatedly been described in hydropolitical research. Researchers agree that Egypt controls the Nile's water resources and that it is by far the most powerful actor in the basin. Privileged access to funding in the World Bank, the early use of treaties, like the bilateral 1959 Agreement with Sudan, and other factors have put it in a very powerful position indeed. Against Egypt's consolidated control, or hydro-hegemony, the situation in the Nile River is defined by an asymmetrical power relationship between upstream and downstream riparian states, in which the upstream states are characterized by relatively weaker power.

Cascao explains how this lack of power and power asymmetries come about:

> Asymmetries of power arise from the lack of internal political and economic stability, the lack of international support and funding, relatively larger knowledge gaps, weak expertise, institutional and negotiating capacity. Asymmetric levels of expertise are decisive in decision-making process as they influence negotiation and bargaining procedures, as well as the implementation and monitoring of projects. (2008: 20).

What she describes are essentially the pillars of hydro-hegemony, depicted in Figure 2.1 (page 26), namely Egypt's riparian position, potential exploitation and political power indicators. These pillars also structure this chapter's description of changing power relations in the Nile.

The chapter begins by outlining the relative riparian positions of East Africa and Egypt which, combined with Egypt's high dependency on the Nile, illustrate the point that manmade indicators, not geography, determine where the water flows to. This outline is followed by an analysis of structural power by way of its economic and military indicators, which have made Egypt much more powerful than East Africa. Considering the close link between a state's financial capabilities, its own wealth and the capacity to invoke financial aid; and its ability to build dams, the financial assessment of Egypt and East Africa is followed by a discussion of the Egyptian High Aswan Dam (HAD) and the Ugandan Narube power plant. This is followed by the analysis of the institutional indicators and ideational capabilities that have propelled East Africa forward in terms of legitimately claiming access

to the Nile waters. The chapter concludes with the fact that over the last decade, East African growing economies, dam building, and successful claims to the Nile water flow, have increased East Africa's relative power *vis-á-vis* Egypt.

Like all hegemons, Egypt has never been all-powerful and its largest weakness is its high dependency on the Nile, a watercourse at the very end of which it sits. The first section of the chapter goes into more detail on this issue.

3.1 Riparian Position and Dependency

Overall about 224 million people live in the basin area; one quarter of Africa's total population (UNEP, 2010: 73). Many of these, about 160 million, depend on the Nile's resources for their livelihoods (UNEP, 2010: 74). The demand for water is likely to rise as rapid population growth all across the basin is predicted. The sustainable distribution of the finite water resources is therefore a pressing challenge on which the upstream / downstream dynamic has a significant influence.

There are several factors that put upstream states in a better position than downstream states. Firstly, common sense suggests that upstream states are in a better position to exploit the water resources than the downstream riparians – the quality and quantity of the water is better. Secondly, much of the course of the river in upstream states is in the mountains and thus these states have more watersheds on their territory, as well as being better suited for HEP projects which produce electricity most efficiently in territories with large altitude changes. Thirdly, pollution flows downward which means that in transboundary agreements on pollution decrease only the downstream state will profit, which impedes joint action (Scheumann *et al.*, 2008: 27) since upstream states can free ride without suffering any consequences. This is also called the Tragedy of the Commons (Okoth-Owiro, 2004: 26; Tvedt, 2010).

According to what has just been argued and based on its riparian position (see Map 1.1 and 1.2, page 3), one could come to the conclusion that Egypt is the least powerful state in the NRB. Not only is it the most downstream state of a highly populated and politically volatile region, Egypt also sources over 95% of its water from the Nile River, making it the most dependent riparian in the NRB (Swain, 2008: 204). This high dependency of the population and industry on the Nile is reflected in the population distribution; over 95% of the 84,5 million Egyptians reside in the Nile Delta (Brunnée & Toope, 2002: 10). That means that

33% of the entire NRB population lives in only 9% of its total area, resulting in Cairo being among the most densely populated cities in the world. Problems of sanitation, clean water supply, wastewater treatment, and pollution are among the most pressing issues Egypt faces due to its high reliance on the Nile.

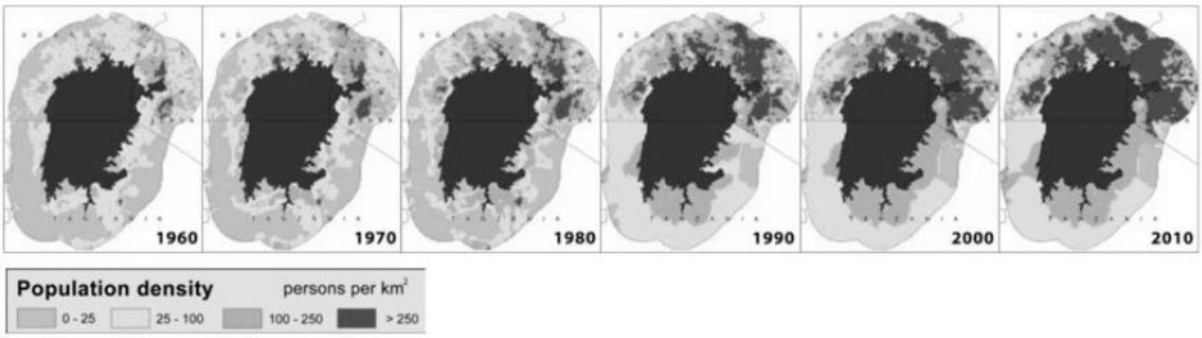
At first glance, the East African dependency on the Nile water looks very different. Lake Victoria is part of the African Great Lakes in the East African Rift which spreads across the region, decreasing the dependence on the Nile due to alternative watersheds. Three riparian states border Lake Victoria: Tanzania, Uganda, and Kenya. Its catchment area extends into Burundi, Rwanda, and the DRC through the Kagera River Basin (LVFO, 2012). East Africa seems to have a powerful geographic advantage over Egypt. Not only is it less dependent than Egypt on the Nile due to its upstream position, but East Africa is also potentially able to decrease the quality and quantity of Egypt's water supply.

However, the dependency on and contribution to the Nile of individual states vary greatly within East Africa. At one extreme is Uganda, which lies almost entirely in the Nile's basin area, a claim no other riparian state can make (Waterbury, 2002: 158). That means every raindrop that falls in Uganda is technically in the Nile drainage area, i.e. Nile water. At the other extreme is Rwanda, which has abundant rainfall and is only connected to the Nile basin through the Kagera River which is Lake Victoria's largest tributary. Although Rwanda's total land area is just over 2,5 million hectares it has over twelve wetlands, diversifying its water resources considerably. At the same time, Rwanda has one of the highest population densities in the world.

The amount of water available for each person in the LVB is far below the global average and declining (UNEP, 2007: 74). In addition to an already high population density showing an upward trend, poor infrastructure, and few water storage capabilities add to water scarcity (UNEP, 2010). Water scarcity is commonly defined as less than 1.000 m^3 per person. By this measure, Burundi, Kenya and Rwanda have been suffering from water scarcity since 2002 and are to be joined by Tanzania and Uganda in 2050, if current population growth remains constant (Brunnée & Toope, 2002: 10). Egypt, despite its arid conditions, is not considered water scarce yet, although predictions suggest that in 2025 the water demand will have outgrown the water supply (Brunnée & Toope, 2002: 10). Urban centres especially grow rapidly and require freshwater for basic sanitation and food security (UNESCO *et al.*, n.d.).

At the moment, Lake Victoria supplies five major urban centres with water: Kisumu, Kampala, Bukoba, Mwanza, and Musoma, which add up to approximately five million people (Okonga, 2010). The pressure on the EAC to develop new sources of freshwater for irrigation and sanitation purposes is unlikely to disappear any time soon. The LVB has the most populated and fastest growing population in East Africa as is illustrated in the Map 3.1 on population increase in the LVB below.

Map 3.1: Population increase in the LVB (UNEP, 2010: 73)



Outside the immediate basin area, however, Egypt's position on the Suez Canal, proximity to the Mediterranean Sea and Israel has provided Egypt with a strategic advantage. Important trade posts have been located in Egypt since ancient time, around 3150BC, as it bridges the ridge between Europe, the Middle East, and Africa. Since 2001, Egypt has become a key actor in the Middle East as ally to the United States in its *War on Terror*.

In contrast, East Africa has been marginalised from global trade routes precisely because of its geographic position (Cascao, 2009: 248). Out of the five East African states in this study, only two, Kenya and Tanzania, have access to the Indian Ocean while the others are landlocked and often lie in mountainous terrain with inadequate infrastructure, making the transport of goods difficult. It could be argued that strategic interests of the international community in East Africa have largely been about its primary resources, not about its people. Strategic interest in the region started with territorial gains for colonial administrations and proceeded through proxy wars during the Cold War to the more recent the large-scale acquisition of irrigation land (see Section 4.2, page 76). The failure of the international community to prevent the Rwandan genocide in 1994 seems to augment this line of argument.

The question arises what the population size and geographic position of states have to do with the power to control the Nile. Firstly, from the data it can be discerned that competition over the resource will become fiercer on the basin and local level. In Kenya over the last ten years, ethnic clashes over waterholes have led to about 500 people being killed (IPS, 2012). The ability to control the distribution of water resources will become more important in the future. Secondly, although Egypt lies at the most downstream end of the Nile and is most dependent on the resource, it utilises most of the water and has the ability to control the water flow. This position of hydro-hegemony, as will be shown below, it has mainly achieved through relatively greater power. East Africa, in contrast, although ideally located to control the quality and quantity of the Nile, yet is unable to develop its own water resouces (see below). As Figure 2.1 (page 26) depicts, the riparian position is a pillar of hydro-hegemony but is far from being the most relevant indicator of control in a transboundary river basin. As will be shown in the next section,

3.2 Material Power

Egypt commands the largest material capabilities in the form of military and economic capabilities, as well as commanding the most advanced hydrological infrastructure. Over the last decade, however, East African states have been growing economically as a trade bloc and have been aspiring to further regional economic integration. This has also meant that East Africa's military capabilities have increased, although they are still dwarfed by Egypt. However, it remains important to note that East Africa continues to be one of the poorest regions in the world with inadequate access to drinking water and basic sanitation. It will be argued that, though East Africa continues to suffer from structural economic weaknesses, the potential to develop its economy and hydro-infrastructure is challenging Egypt's leadership in the pillar of material power.

3.2.1 Economic Indicators

Economic capabilities are routinely measured though the state's GDP. A country's GDP is the sum of all goods and services produced in one year within a country (including the production of foreign firms), i.e. it is the total national annual output (World Bank, 2012). In case of the NRB, the indicators of economic prowess are very much skewed towards Egypt as its GDP at over US$ 229,5 billion (at current prices) (World Bank, 2012) is roughly double that of all the EAC Partner States taken together. In comparison, the EAC's total GDP (at

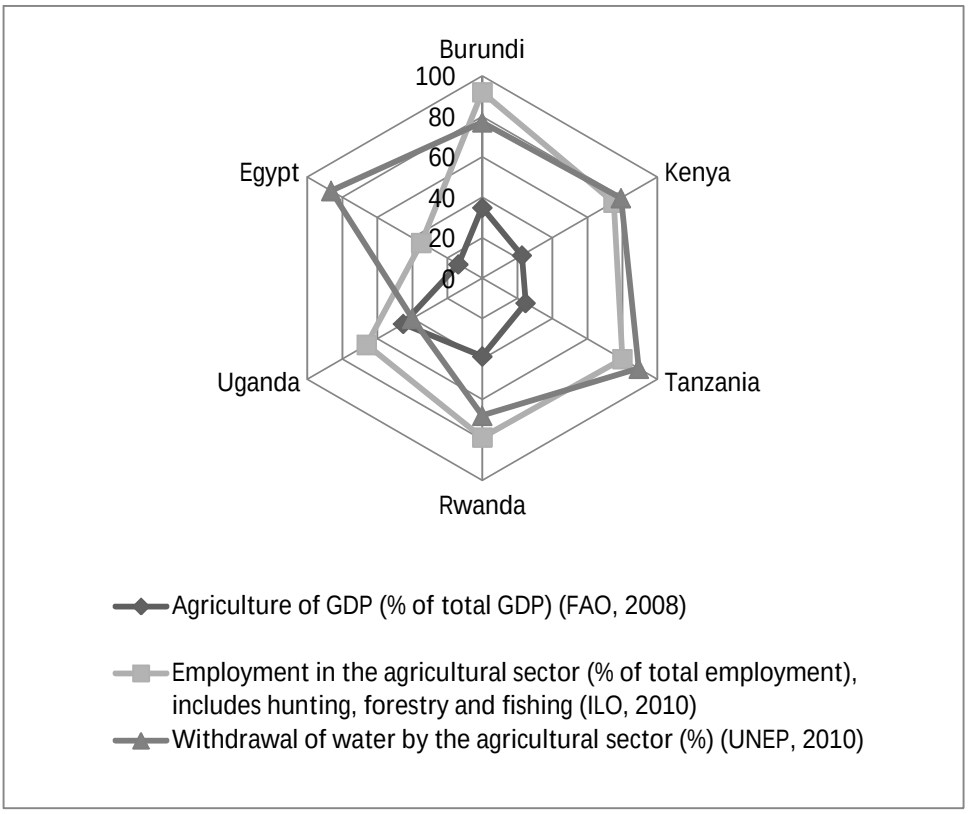
current prices) amounted to only US$ 82,8 billion in 2011 (WorldBank, 2012). Essentially, Egypt produces more and is consequently richer, which, as will be shown later on, has meant it can embark on large-scale hydro-infrastructure projects. Egypt has proven the anonymous quote: "Water flows uphill towards money" as it has managed to surmount the restrictions little rainfall place on economic growth and has developed by far the largest economy of all the riparian states.

Still, times are changing. Egypt's real GDP growth rate[16] plummeted to 1,8% in 2011. In contrast, the EAC Partner States' economies, despite external shocks like the global economic crisis, have grown considerably (World Bank, 2012). While Rwanda and Tanzania have had a real GDP growth of 7.5% and 7%, respectively for several years running (EAC, 2011b: 28), Burundi, which has the slowest growing economy in the region, is still at 4,2% real GDP growth. However, if one considers how much larger Egypt's economy is than those of the EAC Partner states, it will take a while before East Africa has caught up.

The agricultural sector is by far the largest contributor to East Africa's economic output and employment (see Figure 3.1, page 51). However, there is a mismatch between the number of people employed in the sector and the amount of output produced. Figure 3.1 (page 51) makes it clear that Egypt's agricultural sector is more efficient than those of the East African countries in the sense that the sector generates 14% of the GDP and employs 30% of the total employed people (Tadesse, 2008). In contrast, in Burundi the gap between output and the number of people working in the agricultural sector is extremely large; the agricultural sector employs 90% of the population but generates merely 35% of the GDP (FAO, 2008; ILO, 2012). This is the result of many small-scale farm plots. The wider the gap between the percentage of the total employed and the percentage of the GDP, the less efficiently the economy is managed as many people work in a sector that actually produces comparatively little.

[16] "Percentage change of real GDP compared to previous year. Real GDP is adjusted for inflation" (World Bank, 2012)

Figure 3.1: Water and Economy



The economic inefficiency of the East African states is emphasised when one considers that about 71% of the water withdrawn in the Eastern Nile basin is used in the agricultural sector, which is defined by small-scale farmers.[17] However, inefficient use of a large percentage of water from the Nile in agriculture is not limited to these states. In Egypt, despite its much larger industrial sector, 86% of the water withdrawals get pumped into the agricultural sector (WRI, 1998 in El-Din Amer et al, 2005: 7). Although Egypt's agricultural sector barely makes up 15% of its GDP, it uses close to 90% of Egypt's Nile withdrawals, which makes up 95% of the Nile's utilization. This fact shapes the discussion on Egypt's legitimate access to the Nile, although, as has been stated, this skewed and highly inefficient water usage is prevalent throughout the basin and not solely an Egyptian challenge. Uganda handles the nexus between water, agriculture, economic output, and employment most efficiently (see Figure 3.1, page 51). As the situation currently stands, the inefficient usage of water in the NRB leads to a bottleneck in agricultural output since the amount of potentially irrigable land outstrips the amount of water available (El-Din Amer, 2005: 7).

[17] The rest of the water flows to the municipal (22%) and industrial (7%) sectors (UNEP, 2010).

Experts assume that overall the Nile's water resources provide the livelihood for around 160 million people (UNEP, 2010: 73), most notably by means of fishing. Lake Victoria is the most productive freshwater fishery in the world and yields 800,000-1,000,000 tonnes of fish a year, most of which, 75%, goes into the local market (LVFO, 2012). According to the LVFO, two million people live off the fishing industry and the Lake covers about 22 million peoples' fish consumption needs. Fishing contributes 25% of the LVB's GDP. Due to its centrality in the regional economy and its economic growth potential the EAC has declared the LVB an economic growth zone, building on previous experience that decreasing intra-regional tariffs increases the volume of trade.

In 2004-2009 the EAC intra-regional trade increased by over 40% (EAC e-Newsletter, 2009). "broaden[ing] prospects for economic growth and development" (EAC, 2011a). Another economic opportunity for the region is the Tripartite Free Trade Agreement (FTA) between the Common Market for East and Southern Africa (COMESA), the Southern African Development Community (SADC) and the EAC. The COMESA-EAC-SADC Tripartite was supposed to come into effect in January 2012 and is setting up a Secretariat at the time of writing (COMESA-EAC-SADC Tripartite website, 2012). Estimates show that the 26 COMESA-EAC-SADC Tripartite Member States, due to diminished trade barriers and tariffs, have increased their trade volume by more than 300% from 2002 - 2008 already (Granit *et al.*, 2010).

These growth numbers, however, cannot hide the fact that East Africa is one of the poorest regions in the world, even compared to the rest of sub-Saharan Africa. The average per capita income in the LVB is 40% less than in the rest of the continent (LVBC, 2008: 2). With the exception of Kenya, all EAC Partner States are ranked among the Least Developed Countries (LDCs)[18]. The data from these overall country indicators are mirrored by the Multidimensional Poverty Indicator (MDI) which takes both the intensity and incidences of poverty into account (Alkire & Santos, 2010). The East African indexes vary from country to country but the average for East Africa, 0,4 out of 1, indicates high levels and intensity of poverty.

[18] LDCs are measured, by the UN, according to three indicators; low income, the Human Assets Index, and the Economic Vulnerability Index (UN-OHRLLS, 2013).

The interplay of poverty, health and water has long been acknowledged and the seventh MDG links halving poverty by 2015 to "sustainable access to safe drinking water and basic sanitation" (MDG Target 7.C). In the most recent MDG Progress Report (2011), it clearly states that Africa will not meet Target 7.C if progress continues to be as insufficient as it is at present. In four African countries the trend is in fact retrogressive and three of those are Nile riparians, namely Rwanda, Sudan, and Tanzania (UNDP, 2011)[19]. In these countries water is being more unequally distributed between rural and urban, as well as rich and poor populations than was previously the case.

The research presented in this section showed that Egypt is currently the "clear hegemon on the Nile in terms of economic strength" (Whittington, 2004: 2). However, as this study has also shown, and a fact many other hydropolitical researchers have missed, the water is not efficiently distributed in the Egyptian economy. Since the agricultural sector is the greatest user of water by far, more extremely fluctuating water flow endangers it and by extension Egypt's food security. It is unlikely that the sector would be able to cope with less water. Structurally embedded economic problems in East Africa, like too little diversification and an overreliance on agriculture as most of the population remains dependent on subsistence agriculture, have prevented the economic development for the poorest thus far. The regional economic organisations offer countries the opportunity for a more diversified economy. As of now, however, East Africa's economic capabilities are dwarfed by Egypt's output, making Egypt relatively more powerful.

3.2.2 Military Capabilities

The relative wealth Egypt has acquired has meant its spending on military capabilities has been significantly higher than that of East Africa. Egypt's military sector is larger and better equipped than that of East African states. Its defence expenditure amounted to US$ 4107 million in 2011. The East African country with the next highest defence expenditure is Kenya with US$ 507 million (SIPRI, 2012).

Though mainly directed at Ethiopia, threats over upstream water utilization, by high-ranking Egyptian officials over the years gives particular weight to the importance of a military balance in the basin. The military strength of Egypt, relative to the other riparian states, could be one answer as to how Egypt has consolidated control over the Nile.

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[19] The fourth one is Algeria (UNDP, 2011).

But East Africa is catching up. Even though other regionalised conflicts have subsided over the last decade, Somalia's instability threatens the region's security. Consequently East African states have increased their military expenditures, so much so that *The East African* newspaper ran a headline: "EA's [East Africa's] quiet arms race" (Onyango-Obbo, 2011).

In the article to which the headline refers, the journalist Onyango-Obbo points out how the UN and AU policy of reimbursing states that dispatch troops for peacekeeping missions has inadvertently funded several Ugandan fighter jets (Onyango-Obbo, 2011: 9). The fighter jets made a considerable addition to the military power of East Africa and shift "the region's military balance (....) forever" (Onyango-Obbo, 2011: 1). The author also points out that those East African states which have recently come out of a conflict, Burundi, the DRC, Rwanda, and Uganda, have large contingencies of troops since insurgents are being integrated into the respective national army structures.

In other words, as civil conflicts abate East Africa's military power is growing and becoming more streamlined into professional armies. In Egypt, on the other hand, the 2011 Arab Spring shifted the country's military focus to secure domestic stability, away from the Nile. But Egypt is becoming more stable after the first democratic election in June 2012. In summary, the military dimension remains an important factor in the NRB if competition over water increases, with Egypt, as is expected from the hydro-hegemon, still being the leading military power.

3.3 Exploitation Potential

According to the Hydro-hegemony framework, the exploitation potential of riparians is, in addition to material, institutional and ideational power, a pillar of hegemonic consolidated control over the transboundary water flow. This study, like most researchers, will focus on the physical infrastructure, namely dams, as the main indicator of the exploitation potential of water resources. The reason dams are considered crucial in hydropolitical analyses is their double function as both HEP suppliers through turbines and large-scale water storage facilities. A dam allows for storing surface water and thus evening out seasonal variations of the water flow. The high water levels from the rainy season are slowly released during the dry months, allowing year round agricultural production. These two functions make dams a powerful political tool; therefore they tend to be prioritized by governments, who want to give citizens the impression that they are managing 'our' water (Alam *et al*, 2011: 427).

Dams are the ultimate expression of controlling the water flow and hence important indicators of changing power relations.

Governments' ability to realize large-scale infrastructure projects, like dams, depends on their riparian location and relative power *vis-à-vis* other riparian states in the basin (Alam *et al*, 2011: 427). The asymmetrical technical control over the Nile water flow is rooted in the British colonial aspirations and the "patterns for competition and quest for control [of the Nile] were subsequently replicated" (Brunnée & Toope, 2002: 12) and are still discernible today.

As the colonial power in all of the riparian states discussed here, Great Britain went to considerable lengths to ensure that its upstream colonies did not take away from Egypt's water supply. From the start, British colonial ambitions along the Nile were marked by the decision to control the Nile, mostly due to the importance of the Suez Canal which provided the crucial lifeline to Britain's Eastern Empire (Layne, 1994). Additionally, Great Britain's interest in Egypt's water supply has also been linked to its interest in the production of the cotton fields in Egypt (IPS, 2012). Part of the strategy Britain used to control the Nile were legal agreements with other colonial power that guaranteed that infrastructure projects along the course of the Nile can only be constructed with Egypt's approval (Brunnée & Toope, 2002: 14).

Following the ascendances of President Nasser to power in 1954, the Egyptian government addressed the issue of water security, also based on their experience in the Suez War with the British in 1956. Newly emerged national confidence led to radical water securing policies, leading to the signing of the 1959 Agreement and culminated in the HAD, completed in 1970/71 and financed by the Soviet government. The issue of water security for Egypt was then cemented in the bilateral 1959 Agreement between Egypt and Sudan which granted Egypt the majority of the Nile's water flow. Great Britain forfeited all claims to water on behalf of its upstream territory; today's sovereign East African states. By the time HAD was completed, East African states had only recently gained independence[20] and therefore were unable to undertake large infrastructural projects, so that the HAD "determined Egypt's full technical control over the Nile resources" (Cascao, 2009: 247). The HAD's storage capacity

[20] Year of independence: DRC: 1960, Burundi, Rwanda, Uganda: 1962, Kenya: 1963, Tanganyka: 1964

is, at 168km³/year, still significantly larger than that of any of the dams situated in the LVB (FAO, 2009).

Egypt has further expanded its physical control over the Nile water through the New Valley Project also called the Toshka project, in 1997. The Toshka project was perceived across the NRB as highly provocative. The Toshka depression diverts overflow from the HAD into the desert where it forms desert lakes. The Egyptian government under former President Hosni Mubarak conceived the plan to resettle three million inhabitants to mitigate food insecurities (Brunnée & Toope, 2002: 17). According to Allam *et al.*, this project has, ironically, increased Egypt's dependence on the Nile water flow (2011: 427). Whilst the HAD decreased seasonal vulnerabilities, the new projects have diminished Egypt's ability to adjust to decadal, i.e. more long term, water flow variations. Recent press statements by the new Egyptian government seem to suggest that the project will go ahead as the new Prime Minister, Dr. Qandil, laid the foundation stone for an entirely new suburb around the artificial lake (Egyptian SIS, 2012).

In addition to the HAD, the Narubare plant (formerly Owen Falls Dam) is of importance in terms of the White Nile's hydrological infrastructure. The Narubare plant is the largest upstream electricity supplying dam, situated at the outflow of the Lake Victoria to the Nile in Jinja, Uganda. Egypt's dominance over the Nile becomes apparent in that the Narubare plant was built with British money but had to be explicitly approved, as of the 1929 *Exchange of Notes on the Use of Waters of the Nile for Irrigation* (commonly referred to as the 1929 Agreement), by the Royal Egyptian Government in 1949 (Exchange of Notes, 1949). Additionally, Egyptian experts were 'closely involved' in the construction of the dam (Allan, 2000: 258).

As East African economies continue to grow, the importance and political will to build HEP will increase (El-Din Amer *et al.*, 2005). According to the Ugandan Electricity Regulatory Authority (ERA), Uganda's electricity demand increases by 10% annually (Baranga, 2012). Today the lack of electricity can be felt already across the EAC. The Tanzanian electricity grid has 230 Megawatt (MW) too little power due to decreasing water levels in the power dams (Kimboy, 11.02.2011). This means the electricity outages are a daily occurrence and economic development now and in the future is restricted. Small and middle class businesses

are especially affected, since they cannot afford a generator[21]. At the same time, because of the overreliance on hydropower in the region, droughts have repeatedly led to even more severe power cuts across East Africa (Bosshard, 2012). This has resulted in a paradoxical situation, whereby the people with the least access to electricity have to pay most for it (Rugumire-Makuza, n.d.: 2). The Ugandan Electricity Authority approved another 47% average price hike for 2012 (Baranga, 2012). For this reason, East African governments are keen to build new electricity producing dams, regardless of the social or environmental impact.

The power supply is underdeveloped throughout the entire Nile basin, since currently only 1% of the potential is being used by all upstream riparians combined (El-Din Amer *et al.*, 2005: 7). However, the potential for HEP plants to produce electricity is great. Egypt, in contrast, has basically reached its full HEP potential (see Table 3.1).

Table 3.1: Potential and Installed Hydro-electric power[22] (El-Din Amer *et al.*, 2005: 6)

State actor	Burundi	Kenya	Rwanda	Tanzania	Uganda	Egypt
Installed Hydro-electric power (MW)	810[a]	2	34	337	810[a]	2845
Potential hydro-electric power (MW)	+120	+355	+121	+4 500	2200[a]	+138

[a] Source: Baranga, 2012

Over the last decade, under the auspices of the NBI, East Africa has been planning and developing new and old dam projects. For instance, the Narubare plant was neglected under the leadership of Uganda's President, Idi Amin in the 1970s, and has not worked to its full potential since (Allan, 2000). In 1993, instead of renovating the 180-megawatt power station,

[21] The cost for a single household generator is about US$ 180 per month for petrol alone, not to mention maintenance costs, etc. This compares to the fact that 97% of Tanzanians earn less than US$ 2 per day (OPHI, 2010).

[22] These are the maximum capacity levels and can decrease when water levels drop, for example during the summer months (El-Din Amer *et al.*, 2005: 6).

Uganda began to construct the 200-megawatt Kiira Power Station adjacent to the old plant. In January 2012, Bujagali Energy Limited furthermore opened the Bujagali Hydropower Project which provides an additional 250MW of electricity and 388 hectare (ha) of water reservoir (Bujagali Energy Limited, 2012).

The NBI is also implementing water projects in the NELSB (NBI, 2011: 10):

i) The Rusumo Falls Hydro-electric Multipurpose Project (RRFP), shared between Tanzania, Rwanda and Burundi which has appeared and reappeared in planning processes since independence in the 1960s;

ii) the Bugesera Integrated Water and Irrigation Project, shared between Rwanda and Burundi;

iii) large-scale electrical transmission lines across the region under the Interconnection Project framework which distributes Southern African and East African HEP around the regions (Rugumire-Makuza, n.d.); and

iv) fisheries management projects in Lake Victoria's tributaries.

There are also other sources of energy and electricity in the region: natural gas deposits have been found along the Kenyan and Tanzanian coastline; Uganda has discovered crude oil reserves in its western province, around Lake Albert; and oil-rich South Sudan has been invited to join the EAC by the Heads of State (*The Citizen*, 2011). As a result, the EAC's energy future could become more diversified. It should be kept in mind, however, that both oil and gas extractions require substantial amounts of water.[23] The water used during extraction becomes highly polluted and cannot be reused, unlike the water used to produce HEP. In order to guarantee future water quality and quantity, careful management and environmental impact assessments are necessary. Unsurprisingly, such management often does not take place or, where impact assessments have been carried out, like in Tanzania and Kenya when pipelines were built for the Lamu Port- South Sudan- Ethiopia, Transport and Economic Development Corridor (LAPSSET) project, they have been ignored. Even where international standard impact assessments are carried out and followed, these assessments

[23]The precise amount of water needed per gallon of crude oil in petroleum production is difficult to ascertain as private companies are not forthcoming in publishing their data (EC JRC Workshop, 2012).

often ignore the environmental impacts on the entire water flow (Brunnée & Toope, 2002: 18).

It seems sure that East Africa's technical control over the water flow of the Nile is increasing through increased multilateral dam building and other hydro-infrastructure projects. Where Egypt, until now, has had substantially more control over the water, East Africa is emerging as a major player on the continent. The same trend can be observed in the next section on institutional capabilities where East Africa has proven itself a skilled political actor and is potentially able to undermine Egypt's hydro-hegemonic position.

3.4 Institutional Power

As was briefly alluded to in Chapter 2: "The most common form of power for countering the established order is bargaining power" (Zeitoun & Allan, 2008: 11). The East African countries have used this principle in international relations within the framework of international institutions. For many years Egypt was able to mobilize international and basin-wide institutions to strengthen and maintain its hegemonic position over the Nile water by controlling the flow of development funds, creating favourable regimes and substantiating its hydro-hegemony with international treaties. However, in the recent past East Africa has been able to challenge Egypt on a number of issues, thus increasing its legitimate claims and voting power over the transboundary watercourse.

3.4.1 Financial Stalling

One crucial aspect of dam building that was not mentioned above, are the large financial costs. Poor countries, such as the EAC Partner States, have been unable to develop their water resources on a large scale due to a lack of funds. In the past, Egypt has been very successful in blocking upstream projects by using its political influence and taking advantage of the international institutional rules and regulations to block financial aid for upstream water infrastructure projects. An often-cited example of this process is World Bank's influence on large-scale projects in the 1990s.

During the 1990's the World Bank was the only viable source of international donor funding for large-scale projects. The World Bank also set the norms of project evaluation for other funders like the African Development Bank (AfDB). The World Bank's Operational Directive 7.50 stipulates that any project must be fully explained to the fellow riparians who have six months to raise objections. Once this period has passed a Project Appraisal

Document (PAD) is prepared, making final recommendations based on: i) existing agreements, ii) responses from the other riparians, and iii) whether 'possible water use' will cause 'appreciable harm' (Pochat, n.d.: 12). The last part is most contentious; if a downstream riparian can allege that the proposed project is likely to cause 'appreciable harm', a poorly defined term, the World Bank will not give financial aid. Although the policy is meant to ensure that decisions are taken multilaterally and sustainably, it has *de facto* granted downstream states like Egypt veto power over hydro-infrastructure projects. In case of the Nile this has meant that Egypt has blocked funding for upstream development projects for over two decades.

With new financiers in the region, notably the People's Republic of China (PRC), this *de facto* veto power of Egypt's has come to an end. In 2007, the state-owned EXIM Bank of China overtook the World Bank as the largest credit agency in the world (Bosshard, 2008: 2). Large-scale projects, like dams, can now be constructed independently from both the World Bank, the AfDB and, by extension, Egypt. The PRC is hesitant to publish data on its international development aid but according to the NGO, *International Rivers*, the PRC has already financed two HEP projects in East Africa and nine more are being planned (International Rivers, 2012).

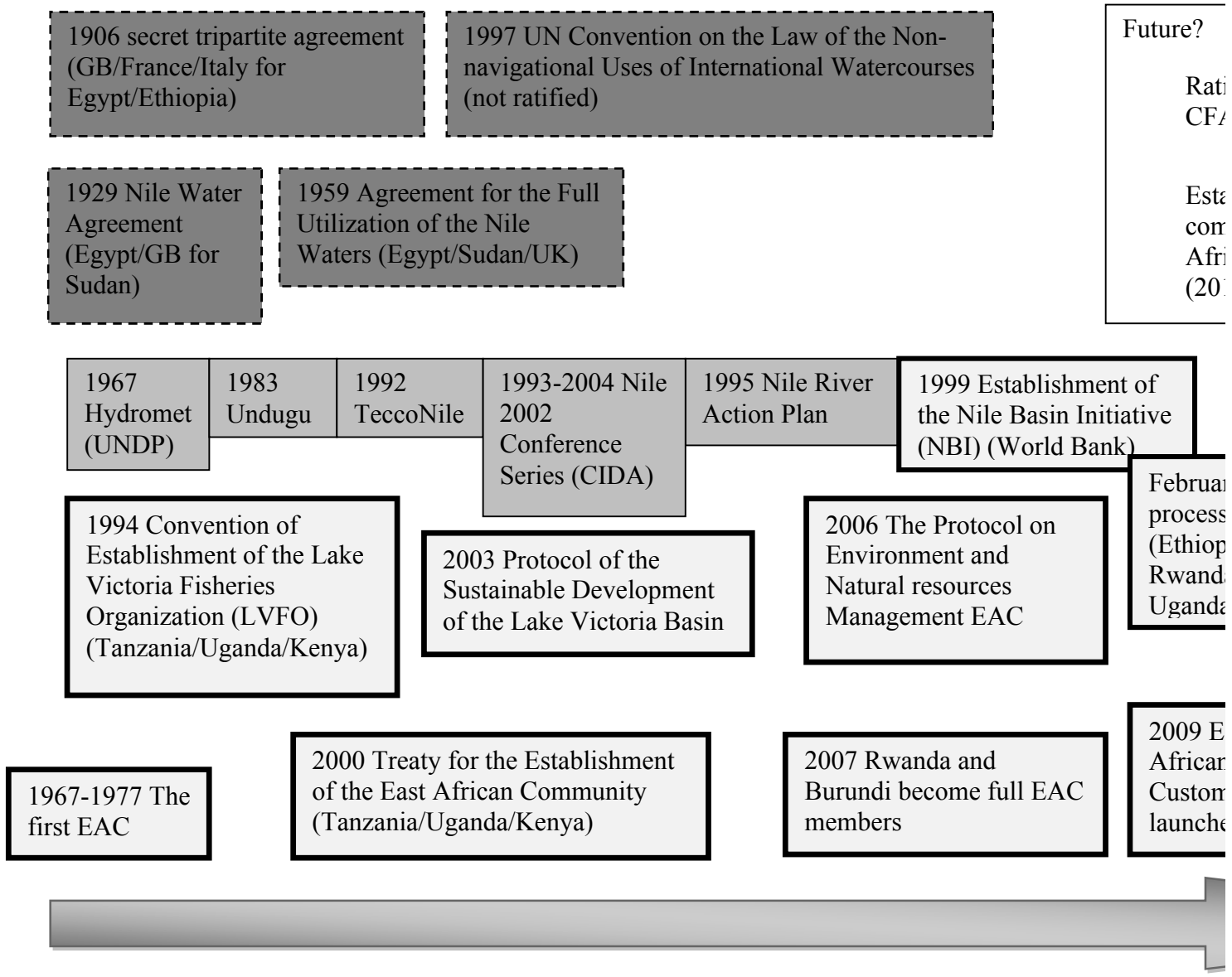
Furthermore, it seems that the PRC finances and builds these dams where other investors have pulled out because the projects are in breach of international and national environmental laws. This state of affairs is well documented by *International Rivers* for the Merowe Dam in the Sudan (Bosshard, 2008). It seems that, in these cases, the absolute territorial sovereignty over water in one's territory is of the utmost importance, not the shared or interdependent nature of rivers. This is unsurprising given that the PRC's foreign policy is guided by the following *Five Principles of Peaceful Coexistence* i) mutual respect for territorial integrity and sovereignty ii) non-aggression, iii) non-interference, iv) equality, and v) mutual benefit. The PRC's investment in East Africa has meant that it can develop its hydro-infrastructure, regardless of Egypt's or anybody else's objections – a fact that the EAC Partner States have recognized and of which they have taken advantage in the last decade.

3.4.2 Negotiation Power

The strategic utilization of the World Bank's policy on hydrologic funding allocation is only one way in which Egypt has asserted indirect control over the Nile. Through discursive and bargaining tools, Egypt has been able to influence the whole basin's agenda, including

bilateral and multilateral political relations (Cascao, 2008). A large degree of Egypt's power is rooted in institutional and legal treaties based on the already mentioned colonial power dynamics. On the following page is a time scale of relevant treaties, agreements, and institutional arrangements which have shaped the asymmetrical agenda-setting power capabilities of the Nile riparians.

Figure 3.2: Time scale of Treaties and Protocols pertaining to the Nile River Basin (assembl



The first blocks (dark grey surrounded by a dotted line) are those treaties which East Africa had little or no influence over. For example, in 1906 the colonial powers along the NRB, Great Britain, Italy and France, secretly decided to guarantee the uninterrupted flow of the Nile to Egypt. The 1929 and 1959 Agreements between Sudan and Egypt, as well as the 1997 UN Convention, will be discussed in more detail in Section 3.4.3 on legal capabilities.

The blocks underneath depict the institutional agreements, all of which have been unsuccessful in achieving their main objective, namely the allocation of Nile water to the riparian states. Many of the expert-driven forums, like TeccoNile, failed because they solely focused on the technical and scientific parts of water sharing, ignoring the complicated political dimension of transboundary watercourses. Allan (2000) and Waterbury (2002) argue that these technical institutions have actually contributed to Egypt's hydro-hegemony. For example, East African states requested 5bcm of the water flow in 1961 but were refused on the grounds that insufficient scientific data had been provided to support the claim (Waterbury, 2002: 153). What constituted this 'sufficient' scientific data was defined by the Sudanese and Egyptian governments in the Permanent Joint Technical Committee (PJTC) to whom the application was made.

Additionally, it has been to Egypt's advantage to insist on these basin-wide agreements. Egypt, as the most powerful riparian against a multitude of weaker and non-aligned states, could push its agenda successfully, with the further assistance of Sudan, which is bound to Egypt's through the PJTC. The PJTC was agreed upon in the 1959 Agreement and obliges the two signatories, Egypt and Sudan, to a unanimous stance in Nile negotiations (Saleh, 2008: 46) against a multitude of less powerful diverse states. According to Allan, this tactic has deliberately delayed renegotiations over water allocations (2000: 260). Burundi, Ethiopia and Kenya have long been aware of the unfavourable conditions of these institutions and refused to take part as more than mere observers. This, however, changed with the Nile Basin Initiative (NBI).

The NBI is the first institution that brings all ten riparian states[24] together; namely Burundi, the DRC, Egypt, Ethiopia, Kenya, Sudan, Tanzania, Uganda, Rwanda and Eritrea as observer. Its vision is 'to achieve sustainable socioeconomic development through the equitable utilisation of, and benefit from, the common Nile Basin water resources' (NBI,

[24] At the time of its founding there were only ten riparian states.

2012). Unlike its predecessors, the NBI's role is twofold: reviewing the current water allocation basin-wide in the Negotiation Committee, while in the meantime the Strategic Action Plan (SAP) is implemented in the form of joint projects in the NELSB and ENSB sub-basin level (Cascao, 2009). Consensus creation over specific projects, like the RRFP, has become easier as a result of the technical and political dimensions being split (Jacobs, 2009). This step has weakened Egypt's control tactics, especially over East Africa, as it falls into a different sub-basin from Egypt, Sudan and the upstream Blue Nile riparians. The institutional arrangement of the NBI has allowed East Africa to be part of the World Bank initiative legitimately and to develop its resources without having to take Egypt into account.

Apart from the NBI, the EAC has from its inception recognized the importance of joint negotiations on the Nile. In the EAC's founding document, the *Treaty of Establishment of the EAC*, Chapter 19 deals with the *Cooperation in Environment and Natural Resource Management* states that the goal of the treaty is "to jointly develop and adopt water resources conservation and management policies" (Article 111, Paragraph 2(b)). Although the EAC Partner States have stopped short of establishing a joint negotiation committee for Nile negotiations, the EAC Secretariat agreed "to push for our rights in the utilization of the Nile waters" (2002). The Partner States did not stop at verbal agreement on joint management as the cooperation strategy was confirmed in the *Protocol for Sustainable Development of the Lake Victoria Basin* (2003) which states that 'the partner [EAC] states shall cooperate with other interested parties, regional or international bodies and programmes and in so doing, partner states shall negotiate as a bloc' (EAC Secretariat, 2003), sentiments that have been confirmed in the *Transboundary Environmental Assessment Guidelines for Shared Ecosystems in East Africa* (2005) and the *Protocol on Environmental and Natural Resources Management* (2006).

Therefore, the bottom-most block (light grey with black solid frames) in the above time scale (Figure 3.2, page 62), represents those Protocols which have increased East Africa's negotiation power. These are multilateral agreements between the Partner States that have changed the negotiation dynamics of water distribution on the Nile. This process has resulted in the CFA that has come out of the NBI's Negotiation Committee and whose significance will be highlighted in the next section on legal capabilities in the Nile.

3.4.3 Legal Capabilities

The discussion around the legality of the Nile water distribution, both on the international and basin level mirrors the ongoing discussion and legitimacy of upstream – downstream competition. Dagne *et al.* have argued that governments use legal principles to strengthen and justify their claims to the water (1999: 226).

The two principles which dominate the discussion, and are directly opposed, are the *acquired right* doctrine and the *absolute territorial sovereignty* (also Harmon Doctrine) (Waterbury, 2002). The acquired right to a transboundary watercourse is achieved through long-standing historical use and resulting dependencies on it. In effect, the first user has more rights to the water flow than the second user, though these terms are necessarily difficult to define. Opposed to this is the absolute territorial freedom to use resources on one's territory as one pleases. In case of the NRB, Egypt is a strong proponent of the acquired doctrine, while upstream states have advocated their sovereign right to the water. Egypt's historic right is based on two factors; its high dependency on the Nile for its survival and its long-standing legal claims.

This dynamic is made more complicated by the lack of a "binding international law on water utilisation" (Martinon, 2010: 56). The only attempt in this direction has been made by the UN. The 1997 Draft Convention was drawn up after 30 years of negotiations under the auspices of the International Law Commission (ILC) (Mohamoda, 2003). The Convention will become legally binding once 35 UN Member States have signed or ratified it; but as of the 1st of January 2012 only 26 states have done so, none of whom are Nile riparians (International Water Law Project website). For now, the 1997 Draft Convention remains a "conceptual tool for negotiations" (Waterbury, 2002: 28).

Yet, in view of the fact that it is not legally binding, one may well question the usefulness of this conceptual tool for River Basin Organisations (RBO) which have to find concrete solutions. This has been one of largest controversies among researchers in international water law (Dagne *et al.*, 1999; Hu, 2006; Okoth-Owiro, 2004; UNDP-GEP International Waters Project, 2011). Conca argues that the 1997 Draft Convention is the culmination of decades of regime creation in the global management of international river basins and that thus a degree of norm convergence has taken place (2006: 120). The 1997 Draft Convention attempts to reconcile the need for upstream states to utilise their water resources and *equitable utilisation*,

with guaranteeing downstream states future water supply and averting appreciable harm to the water flow.

The 1997 Draft Convention might not be legally binding and norm convergence might not be as far along as Conca suggests, but for East Africa the emergence of the *equitable utilisation* concept, in the late 1990s, has offered the opportunity to legitimately lay claim to the Nile water flow. Before the concept of equitable distribution emerged, laying claim to Nile water was equivalent to 'stealing' all the water from Egypt. But nowadays, claims can be supported by arguments in terms of the guidelines provided in the 1997 Draft Convention. The East African states' disadvantage, however, has not entirely disappeared, as it will always be harder to prove that you use water equitably than to prove harm is being done to the water quality and quantity (Waterbury, 2002).

By far the most controversial treaty on the Nile is the bilateral 1959 Agreement which forms the backbone of the hydropolitical dilemma in the Nile basin – downstream riparians want to maintain it while upstream riparians want to change it (Cascao, 2008: 245). The 1959 Agreement is by no means the only treaty which disadvantages East Africa in terms of water flow allocation; eleven such treaties were signed between Great Britain and Egypt, Great Britain and Italy, Great Britain and Ethiopia, Great Britain and Independent Congo and Great Britain and Belgium in the years 1891 to 1952 (TFDD, 2011). Mohamoda concludes that all of these were based on the colonial aspirations of the British Empire (2003). Under the *Nyerere Doctrine* which rejects "any categorization of international obligations which a successor state might have to accept or reject only because of the nature or type of the obligation" (Mekonnen, 2010: 434), the upstream states have rejected all agreements they did not negotiate as sovereign states. Undoubtedly, until today the 1959 Agreement is the most influential treaty regarding the utilisation of the Nile waters (Mohamoda, 2003).

According to the 1959 Agreement, Egypt is allocated the largest part of the water flow, 75%, Sudan 15%, and the remaining 10% is reserved for mean evaporation. Supporting Egyptian interests was a feature of earlier agreements such as the 1929 Agreement, which assigned Egypt 96% of the water flow. As was mentioned earlier, the 1959 Agreement also binds Sudan and Egypt together in negotiations under PJTC and grants Egypt the right to inspect and investigate any Nile projects for appreciable harm to its water flow. Apart from the blatantly unequal water distribution, whereby two states claim 100% of a transboundary water flow for themselves, the 1959 Agreement leaves out provisions for protecting water

quality, or measures for flood control or environmental protection. Secondly, changing circumstances in the physical availability of water or political shifts in the riparian states are not mentioned (Brunnée & Toope, 2002). Both of these factors play a crucial part in the development and degradation of the Nile today and make renegotiation necessary (Brunnée & Toope, 2002: 15), even if the water allocation were to remain the same.

Not surprisingly, there have been numerous attempts to renegotiate the 1959 Agreement and break the legal deadlock between upstream and downstream states. To that end, the NBI's Negotiation Committee recommended the CFA which obliges all riparian states "not to cause significant harm to the water security of any other Nile basin countries" (Article 14(B) quoted in Yohannes, 2009: 76) and thus ignores the historic rights of previous users. If ratified, the CFA would establish a permanent river basin commission which could propose new water allocation mechanisms. Article 14(B) essentially amounts to a legally sanctioned redistribution and is the reason for Egypt's and Sudan's rejection of the CFA. The CFA has since been adopted by the six upstream riparians, all EAC Partner States and Ethiopia, the minimum states required for ratification. At the moment of writing, the CFA is still awaiting ratification by the national parliaments. It is noteworthy that the CFA represents the first alternative legal framework on the NRB brought forward by a coalition of upstream riparian states, despite Egypt's explicit opposition. Even if the permanent river commission will not be established, the CFA symbolizes a growing East African confidence.

Undoubtedly, the legal regime in the NRB has played a crucial part in Egypt's position as the hydro-hegemon. The British support, based on their colonial interests, has resulted in a highly skewed legal regime which does not just advantage Egypt but actually ignores *any* East African claim. The absence of a legally binding international convention has aided Egypt for years in insisting on its historic right. The 1959 Agreement particularly has attracted researchers' and policy-makers' attention – while Egyptian representatives consider it legally binding, East African states have rejected the 1959 Agreement since the 1960s. However, only the emergence of *equitable utilisation* in the 1990s has brought increased legitimacy to East African water claims. The concept of *equitable utilisation* gained further legal backing in the CFA which has been endorsed by all EAC Partner States. It has been argued that the CFA, although not yet ratified, is symbolic of the newfound East African confidence in the NRB. The new growth in confidence will be further discussed in the next section on the ideational capabilities of the riparians.

3.5 Ideational Power

The intersubjective understanding that one actor is more powerful than another is as important as the material capabilities that underpin asymmetrical power relationships. It prevents actors from using other capabilities or challenging existing rules and principles. Although from a different time and setting, Steven Biko's famous quote that "the most potent weapon of the oppressor is the mind of the oppressed", applies equally well to the NRB because all forms of hegemony rely on convincing other actors of their power, thus insuring the unquestioned continuance of the *status quo*. Ideas are the most effective way of exerting control and also the least tangible aspect of power (Cascao, 2008: 15). In this study it will be shown that the changing power balance between Egypt and East Africa is related to increasing knowledge and expertise about the transboundary water flow of the Nile.

3.5.1 Knowledge Capabilities

Egypt had been able to establish technical control over the Nile (see Section 3.3, page 54) partly because it was the only riparian that had the resources to study the Nile and create knowledge which it could utilise to its advantage. The example of the construction of the Owen Falls Dam illustrates the dependency of other Nile riparians on Egypt's knowledge. Even today Egypt continues to have a permanent observer on site supervising the water levels (Waterbury, 2002: 159), meaning that this process is still ongoing.

The East African riparians have recognized the power in these mechanisms and have put pressure on Egypt to finance post-graduate diplomas on water resources under NBI auspices (Kagwanja, 2007: 328). The fact that the NBI Secretariat is based in Entebbe, Uganda is another important indicator that East Africa is advancing its experts and knowledge into the Nile governance regime.

Secondly, Egypt has for a long time managed to influence the 'rules of the game'. For many years Egypt was the only riparian with national representation in Washington, increasing its visibility and making it the go-to state on Nile controversies. Egyptians headed the UN Environmental Directorate and the International Law Advisory position during the late 1980s and 1990s (Allan, 2000). Egypt also led crucial World Bank departments concerned with environmental and international law (Allan, 1999: 3; Allan, 2000). Concepts such as "The Nile is Egypt and Egypt is the Nile" shape the international normative understanding of the

Nile and Egypt as being interchangeable. The East African states are put in a position where any claims they make 'take away' from the Nile's rightful owner.

One might argue that these mechanisms are not a conscious exercise of power but rather the result of inaction on the part of the other riparian states and of unconscious decisions. However, Lukes points to the notion of *responsibility* towards both actions and non-actions as the determinant of power when he says that "the point, in other words, of locating power is to fix responsibility for consequences held from the action, or inaction, of certain specifiable agents" (1974: 56). Therefore, even if Egypt did not actively apply ideational power to strengthen its control, the fact remains that Egypt did nothing to stop strengthening it in this way either. This is the real determinant of power East Africa is in the position where is has to build up its knowledge capacity while Egypt merely has to defend the *status quo*.

3.6 Closing the Gap

The question is for how much longer Egypt will find itself in the position to defend the *status quo*. For decades, as the discussions in this chapter showed, Egypt established and maintained hydro-hegemony. Through structural economic advantages, early technological advances, political strategizing, legal tools and greater knowledge capabilities, Egypt clearly established itself as the most powerful state in the NRB and has thus controlled the Nile flow. In addition, Egypt managed to contain upstream development projects by withholding the financial means necessary. Egypt used a variety of strategies and tactics – from coercive to cooperative − underpinned by its strong power indicators to control the Nile water flow.

Yet, in terms of all the indicators discussed here, East Africa is pushing to the fore. This chapter set out to establish whether East Africa has been gaining power according to the Hydro-hegemony framework. Through numerous examples and synchronic descriptions of the major developments in the NRB's political dynamics since 2002, it has been shown that East Africa's power is indeed increasing. The power gap between East Africa and Egypt is getting smaller.

The chapter began by looking at the riparian position and dependency levels on the Nile. Across the White Nile, populations are growing and dependency on the Nile for drinking, sanitation, irrigation and electricity consumption purposes will increase, making the competition over the water ever fiercer between local communities as well as countries.

A discussion on the power indicators followed: i) material power, which is closely linked to exploitation potential, ii) institutional power and iii) ideational power. In terms of material power, the EAC Partner States have not yet caught up with Egypt. Egypt's economic output continues to be by far the largest in the basin and its military is consequently larger and better equipped than that of the other states. However, it was argued that Egypt's utilisation of the Nile water is inefficiently distributed by being highly skewed towards the agricultural sector. In the long run this diminishes Egypt's ability to deal with diminishing water flows.

East Africa faces serious economic challenges due to too little diversification, and poverty is intense and widespread. Nevertheless, regional economic organisations have increased their trade volume and economic growth is relatively high. This economic growth has also been a result of regional stability and has allowed the states to streamline their national armed forces. In terms of development, the supply of HEP is being pushed forward and long-standing projects, like the RRFP, are now being realized. This increase in infrastructure development has been made possible by means of the investment of EXIM Bank of China and the NBI's two-tier governance approach. Overall, the multilateral and joint approach of the East African countries has increased its economic output, electricity supply, and institutional negotiation power.

As it is one of the most controversial issues in the NRB, a large part of the chapter focused on the legal dimension of the Nile water distribution. Egypt has long justified its almost exclusive access to the Nile through the 1929 and 1959 Agreements which are deeply rooted in British colonial aspirations. The emergence of *equitable utilisation*, coupled with the CFA, has increased East Africa's legitimate access to the Nile since the 1990s. The Uganda-based NBI Secretariat, which stands for the increased knowledge capabilities East Africa is developing, has contributed to legitimising access to the Nile by the East African states.

In the following chapter, the consequences on Egypt's hydro-hegemony will be analysed based on the finding in this chapter that East Africa is indeed closing the power gap compared to Egypt.

CHAPTER 4: IMPACT ASSESSMENT

In the previous chapter, the context and dynamics of the White Nile were established in some detail. It was argued that East Africa is experiencing growth in relative power compared to Egypt, the hydro-hegemon. This chapter will begin by briefly returning to the counter-hegemonic strategies that were introduced in Chapter 2 to expand on East Africa's increased power and analyse the degrees of success each strategy has had on changing the power dynamics. This is followed up with the challenges that East Africa faces to become a united player at the source of the Nile, the Lake Victoria.

East Africa's and Egypt's aim at consolidating control over the Nile begs the question: *Why?*. Why are the riparian states putting so much effort into controlling a resource that is by nature uncontrollable? Securitization, the rhetorical process whereby an issue elevated above day-to-day politics and made a matter of national security, of water and growing pressures of population growth plays a part in this process. One thing that also emerges from the discourse analysis is that due to the securitization of water, Egypt will try to maintain the *status* quo for as long as possible.

This leads to the third part of the chapter which goes into the impact of successful counter-hegemonic strategies for Egypt, thereby addressing the main research question. The answer to this question is divided into two categories, the impact on Egypt's water flow and the impact on the Egyptian water resource control strategies. While the former is self-explanatory, if East Africa uses more water upstream, Egypt receives less downstream; the latter is more complex and rooted in this study's theoretical framework. The LWRG's Hydro-hegemony framework conceptualises power as underpinning water resource control strategies over transboundary watercourses (see Section 2.2.2, page 27). Since the power relations are changing, it will be argued that Egypt is adjusting its own water resource control strategies accordingly, from being a coercive hydro-hegemon to a more cooperative stance with the aim of maintaining consolidated control.

The last part of this chapter looks tentatively at the future of the Nile and particularly at what would happen if Egypt's hydro-hegemony collapses. This question is closely linked to the environmental decay along the NRB. It is argued that in the long run neither East Africa nor Egypt can be successful unilaterally in the face of rapid environmental decay and bleak

climate change forecasts. Benefit-sharing projects and genuine cooperation can secure the water resources for future generations and ecosystems.

4.1 Counter-hegemonic Strategies

This section provides a short summary of East Africa's counter-hegemonic strategies against Egypt's historic power position on the NRB, many of which were mentioned in the third chapter already. As was outlined in Chapter 2 on the Hydro-hegemony framework, Cascao (2008) describes these strategies in seven stages: i) reactive diplomacy, ii) active diplomacy, iii) cooperation, iv) mobilising international funding, v) the construction of expertise-based knowledge, vi) discourse alternatives, and vii) claim on legal principles. Having outlined the East African counter-hegemonic strategic successes, the second part of this section will address some of the challenges East Africa faces with regards to creating a stable multilateral counter hegemony.

4.1.1 Achievements

East Africa's international diplomacy against Egypt's hydro-imperialism was for a long time reserved to evocation of the Nyerere Doctrine. The Doctrine rejects any previous Nile allocation agreements since none of EAC Partner States took part in the negotiations as sovereign states. As recently as 2000, Allan reflected on the *Nile 2002 Talks*, stating that the Nile riparians questioned Egypt's water rights but never put it onto the official agenda (2000: 218). In 2002, for the first time the Kenyan and Ugandan parliamentarians discussed the legality of the 1929 Treaty and called for support from other East African governments for their denunciation of it (Martinon, 2010: 56). The first phase of the counter-hegemonic strategy, international reactive diplomacy on the Nile reallocation, was kept at a low profile and proved to be unsuccessful to change the Nile water allocation.

The emergence of the EAC and growing economic demands for the Nile water flow for HEP production has meant that the counter-hegemonic strategies moved into the second phase as criticism became more active. Based on the opinion of water experts, "regional instability [is] one of the main obstacles to cooperation and development" (El-Din Amer *et al.*, 2005: 10). It is therefore not far-fetched, when Kagwanja asserts that the EAC builds the confidence and cooperation required to "vigorously assert their right to utilise the Nile waters" (2007: 326). Numerous multilateral agreements around the LVB, particularly the establishment of the LVBC in 2001 (see Figure 3.2 on the time scale of Treaties and Protocols pertaining to the

Nile River Basin, page 62) have served East Africa as a more successful strategic tool to lay active claim to the Nile water.

Cooperation did not stop at the sub-basin level as the NBI granted East Africa the chance to widen its strategic impact, moving into the third phase of the counter-hegemonic strategy. The two-tier approach of the basin-wide NBI has allowed East Africa to increase its water utilisation by constructing projects within the NELSB which would have been previously unfeasible due to the asymmetrical power relations and financial constraints then existing.

Financially, the emergence of the PRC as a global actor in development projects has meant that East Africa could build large-scale hydro-infrastructure projects, like dams and transmission lines to its grids, which would have previously been obstructed by Egypt in the World Bank. The counter-hegemonic strategy to build up its own hydro-infrastructure projects by mobilising international funding has been very successful in terms of granting East Africa access to the Nile.

Section 3.5.1 (page 68) on knowledge capabilities portrayed East Africa's growing expertise-based knowledge. Postgraduate courses have been created and in December 2012, the Second East African Young Water Professional Conference will take place in Kigali, Rwanda, supported by governments and private companies who have recognized the importance of supporting the next generation of East African water managers. Cascao also points out that the NBI grants its member states the opportunity to take part in international conferences and shape the discussions and priorities that go into decision-making (2008: 25). If the new generation and the overall knowledge capabilities are improved this could prove to be an important aspect of East Africa's counter-hegemonic strategy.

Knowledge capabilities essentially serve to legitimize the claim to the water and to create an alternative discourse on the *status quo* water distribution mechanism. The emergence of the *equitable utilisation* legal principle has allowed the upstream 'discourse coalition' between East Africa and Ethiopia to create increasing support for its claims in the media, at the national level, in official gatherings and among academics and technicians (Cascao, 2008: 26). This researcher also found that despite Egypt's historic right and high dependence on the Nile, most researchers and international media sources consider its hard-line position on the current Nile distribution untenable. For non-hegemons to have their side of the story heard and accepted is a major success in terms of counter-hegemonic strategising.

The final stage of the counter-hegemony strategy, according to Cascao (2008), is the claim to the transboundary watercourse based on legal principles. The CFA is the strongest counter-hegemonic tactic and challenge to Egypt's hydro-hegemony that the upstream discourse coalition has put forward. Considering that the CFA has not yet been ratified, its impact, once in place, remains to be seen. However, the creation of a permanent joint river commission which would have the power to legally re-allocate the Nile water flow is the ultimate expression of changing power relations and diminishing Egyptian hydro-hegemony.

Despite these successful multilateral counter-hegemonic strategies, one must be careful not to romanticize the degree of East African regional integration and cross-border cooperation, particularly on the local level.

4.1.2 Challenges

The large-scale cross-border projects that were described in Section 3.3 (page 54) on the East African exploitation potential, show that a large degree of trust is required, and apparently in place, between countries so that they will be able to share their electricity and river banks to create a win-win situation. For example, the RRFP in the Kagera River Basin is set to produce 60-70MW which is to be shared equally between the three riparian states, Burundi, Rwanda and Tanzania. On top of that, the three countries agreed in 2006 to jointly manage the dam (Rugumire-Makuza, n.d. b). However, even on the 'exemplary' RRFP project (RwandaEmbassy Sweden, 2012) the national compensation and resettlement policies vary greatly between countries, creating high tensions between the local communities on different sides of the fence (NBD, n.d.).

As a matter of fact, around the entire Great Lakes region, local cross-border resource− and border disputes are common (Okumu, 2010). The Migingo Island dispute in 2009 demonstrates that East Africa is still a long way from sharing resources multilaterally. The surface area of the island is about 2000m² and it has no notable resources, except for being located in an area with large amounts of Nile perch. The Island serves as transit and drying point for the fishing trade and a small and relatively wealthy community has established itself there. Due to the abovementioned creation of an artificial colonial border Uganda and Kenya are both in the position to claim the island as their own. Firstly, the island does not feature in any map from the 20th century and secondly, both countries were British territory, hence a dispute over a small rock seemed unlikely. Yet, in 2009, the two countries found themselves

at the brink of war over the fishing rights. These conflicts are often fuelled by the exclusion of parts the local population and end up in cross-border disputes (Okumu, 210: 281).

Tensions over Lake Victoria has also feature at the state level. The three bordering countries, Kenya, Tanzania and Uganda dispute the causes of water levels dropping. Between 2004 and 2005, the water levels in the Lake have been reduced by 1,5m (Okumu, 2010: 291; ARN, 2011). Uganda alleges that these drops are due to climate change; however, Tanzania and Kenya mistrust these allegations and blame Uganda for over-draining at the Narubare and Kiira HEP plant to produce sufficient electricity and to supply Egypt with water. According to Okumu, the mistrust and allegations were fuelled by Uganda's unilateral construction of the Kiira plant (2010: 291). Furthermore, "[t]he disputes in Lake Victoria are an illustration of the lack of regional arrangements over the sharing of trans-boundary natural resources (water and fish)" (2010: 292).

Although the role of the LVBC is to harmonize East African policies, the reality is that in many cases "unfortunately countries continue to prioritize self-sufficiency approach, which is untenable given the power needs of the region, currently and in the coming decade", says Madame Rubomboras, the NBI Project Manager (quoted in Rugumire-Makuza, n.d.). Whether East Africa can become viable as a regional block and take on joint responsibility or will "disappointingly fizzle out" will be tested on Lake Victoria, which is "overfished and poisoned by the sewage running off its overpopulated shores" (*The Economist*, 2009). At the time of writing, Alam *et al.*'s argument that the riparian states simultaneously develop their 'own' water resources and take part in international projects through the NBI (2011: 429) certainly seems to be valid.

This implies that EAC Partner States might negotiate jointly with Egypt if it is in their respective interests since it increases their bargaining power. However, sharing resources like fisheries and water internally remains challenging. Rugumire-Makuza (n.d.) emphasises this difficulty, pointing out that the weak legal framework of cross-border projects, in the absence of a CFA, means that states can easily opt out of the Memorandum of Understandings that underpin these developments (n.d.). The opportunity that the PRC's money has granted the respective governments has also increased the planning of unilateral projects, or at least increased the temptation since no restrictions are in place (Cascao, 2008). Yohannes contents that: "As it stands now, the state in the Nile basin is still regarded as the all-knowing sole authority over its domestic resources" (2009: 77).

Whether unilaterally or multilaterally, East Africa wants to use more Nile water and is strategically working towards achieving its goal, affecting Egypt's hydro-hegemony on the Nile. The next section will look more closely at the reason behind East Africa's and Egypt's strategizing, namely the securitization of water.

4.2 Securitization of Water

The question arises why it is important for the riparians to achieve consolidated control even if it harms them in the long run not to agree to basin-wide projects. Alam and colleagues explain:

> An uncertain water supply is problematic for two reasons. First, because of the role water plays in socio-ecological systems means uncertain availability can have large social, political, ecological and financial consequences. Second, the need for water is increasing just as governments' ability to meet demand is decreasing. (...) Most governments seek to minimise the uncertainty by exerting control over hydrological flows. (2011: 426)

One way that governments and the public in their domestic setting think about these uncertainties has been to rhetorically construct water as an existential threat. This process is also called securitization (Buzan *et al*., 1998). Particularly Egypt has securitized the Nile.

This process of securitization of the Nile water flow emerged under British imperial control which is illustrated by the Fashoda Crisis between France and Great Britain. Prompted by a hydraulic engineer at the Egyptian Institute in Paris who suggested the Nile water flow could be dammed in the upper Nile, the French sent troops to Fashoda (now in Sudan) in 1898 as a preliminary to possibly building a dam there (Layne, 1994: 6). Over the decades many such projects have been planned but as yet humans have not managed to subjugate the forces of the Nile water. Back in 1989, the British government and public opinion perceived one French battalion in Sudan (without any technical equipment to build a dam) as such a threat to their position on the Nile, and the water flow itself, that they marched into Sudan the same year and confronted the French (Layne, 1994: 6). Due to a fragile domestic political situation and a weaker military might than Britain, France was forced to retreat and leave the upper Nile in the control of imperial Britain (Layne, 1994: 7). This incident gave rise to a number of secret treaties assuring Great Britain that the Nile flow would continue uninterrupted. The example illustrates the amount of resources Great Britain poured into securing the Nile water

flow, even against miniscule threats. Egypt has taken on the same securitization rhetoric – the Nile is existential to Egypt's survival.

Egypt is often portrayed as the only country which has acquired the right to the Nile water over thousands of years. The often repeated statement by the Greek historian Herodotus "Egypt is the gift of the Nile" (460 BC) adds to this general perception. However, this does not reflect archaeological findings, which show that people upstream as well as downstream, have used the water for irrigation purposes as long as people have settled there. The Nile banks have provided the richest resources to arid regions and some of the oldest artefacts in Africa can be found in the riverbanks. At the same time, the populations were much smaller and life was shaped by resource availability, not resources moulded to fit the demand. This equilibrium was revolutionised by industrialisation which is why the British colonial era still shapes historical claims in the region today.

While the securitization rhetoric has been of long standing in Egypt, it is relatively new to East Africa. However, increasing populations demand for HEP to grow economically, and decreased water quality and quantity have led to securitization across the basin. Headlines such as "Upstream states should strike while Egypt's in turmoil" reflect the growing discontent in East Africa (2011) over the current water distribution. This researcher also argues that the recurring academic debate on Water Wars and the conflict potential of water sharing has not aided the process of de-securitization of the Nile, but the reverse.

Securitization is problematic for several reasons. Securitized resources allow for extraordinary measures, like threats to use violence (see Section 4.4, page 80), escalating conflictual relationships faster. Furthermore, ideological compliance shapes the perception of the transboundary water resource, since often the notion of 'us' and 'them' gets invoked (based on Buzan & Weaver, 2003), making the necessary basin-wide agreements harder to negotiate.

To synthesise these arguments, the way the Nile has been securitized in domestic discussions across the basin has led to a situation where competition and the aim of controlling the Nile water flow has become even more important than it was previously. Furthermore, the Nile is not the only river where securitization of water resources is increasingly shaping policy and investment decisions. The consequences of this global securitization will be looked at in the following section.

4.3 Impact on Egypt's Water Flow

The obvious impact of East Africa's increasing power over the Nile is that more water will be used upstream and less will arrive downstream, as the long-term consequence of the power shift means that the EAC Partner States will utilise more of the water flow themselves. The construction of three HEP plants near Jinja, Uganda alone: Narubare, Kiira and Bujagali, show the acceleration of HEP production in the upstream White Nile countries. The water used to produce HEP can largely be re-used further downstream once it has been through the turbines. However, water used in irrigation for the agricultural sector cannot be reused. It is therefore the second feature of dams, their storage capacity, that makes them politically controversial. Although governments have argued that their escalating populations require them to increase food production, there is evidence to the effect that neither upstream nor downstream populations are on the receiving end of increased agricultural production.

International privately owned companies, often with the back of their home governments, buy or lease land in sub-Saharan Africa on a grand scale, also referred to as land grabbing or land acquisition. The resulting large-scale agricultural activities often deprive local populations of sufficient water when water flows are diverted to meet the companies' needs, since in practice the companies have no water restrictions placed on them (Cotula *et al.*, 2009; Herman, 2011). The 2012 Global Hunger Index has warned that Burundi already has alarming levels of hunger due to unsustainable use of land, water and energy ("Burundi: Report Warns Land, Water Pressure to Cause Hunger", 2012). Local activists have started to call the process of buying land and using water uninhibitedly 'water grabbing' (Herman, 2011). The situation is especially precarious as the FAO estimates that a maximum of 8 million hectares irrigated land can be sustained at current levels of Nile water flow (Appelgren *et al.,* 2000). Egypt, Sudan, South Sudan and Ethiopia are already irrigating about 5,4 million hectares and have leased out another 8 million hectares over the last few years ("Burundi: Report Warns Land, Water Pressure to Cause Hunger", 2012). The NGOs that compiled the 2012 Global Hunger Index explain that the political will to implement sustainable solutions to distribute the water equitably, frankly, seems absent:

> Food security is threatened by governments' focus on short-term economic gains; uncoordinated land, water and energy policies; and lack of political willingness and action to design policies that increase efficiency and reduce waste of natural

> resources while protecting the poor. ("Burundi: Report Warns Land, Water Pressure to Cause Hunger", 2012)

According to a report by Lorenzo Cotula and his colleagues (2009), international land acquisition is driven by three processes; i) increased food prices makes land acquisition in low rent countries a profitable business, ii) the demand for biofuels, especially in Europe, is increasing, and iii) food insecurity in countries with high populations, like Kuwait and India, has driven these countries towards producing food in Africa and shipping it home to meet their domestic market demand. In all three cases, the local populations along the NRB are losing out; they are not on the receiving end of the agricultural production, the land and water needed to meet their own food production is increasingly becoming scarce and no cross-border analysis of the impacts of land acquisition has been performed to date (KH, 2012).

Although the impact of upstream projects in the NRB on Egypt's future water supply is the driver behind the conflicts and disagreements between countries in the NRB, within the framework of this study, upstream infrastructural development is a metaphor for the impact of East African claims on the Nile and Egyptian hydro-hegemony. After all, the NELSB contributes only 14% to Egypt's water flow since the largest part of the White Nile evaporates in the Sudd Swamps in South Sudan. Moreover, Egypt is less dependent on the Nile for its food security than it used to be; the agricultural sector contributes 40% less to the GDP now than it did half a century ago (Selby, 2005: 13). At the same time the import of water-heavy commodities, or Virtual Water, has increased significantly and supplemented the Egyptian agricultural sector, further decreasing Egypt's dependence on the Nile water flow (Cascao, 2008).

What is being discussed in this study is Egypt's hydro-hegemonic position. In other words, not the volume of water flow Egypt actually receives but its ability to control East Africa from refraining to use the transboundary watercourse. Therefore, what matters is not whether or not water used in dams can be 'recycled' but that Egypt can no longer stop East Africa building hydrological infrastructure in the first place, whomever they serve. *That* is the indicator of diminishing Egyptian hydro-hegemony.

As was explained in Chapter 2, the hydro-hegemon uses all available water resource control strategies to underpin its hydropolitical position. As Gramsci noted and neo-Gramscians have since expanded on, hegemony derives its power from a combination of coercive and non-coercive strategies. The next section will look at how Egypt has moved from being a coercive

hydro-hegemon to using cooperative strategies to maintain the *status* quo as the other riparians are becoming more powerful.

4.4 Impact on Egypt's Water Resource Control Strategies

As the Nile's water flow will decrease through increased upstream usage or climate change, respectively, Egypt has two choices for compensating; through technical innovation or political manoeuvring. The technical solution would mean the diversification of Egypt's water sources, for example by pumping its very limited groundwater resources to the surface, a short-term approach at best, or through desalination. As a matter of fact, the tourist resorts in Sharm El Sheikh already receive their freshwater supply through desalination. Yet building and operating desalination plants is not only expensive, $393.8 million per year for Egypt in 2010 alone (GWI, 2010), but also environmentally harmful by releasing chemical discharge back into the oceans (Lattemann & Höpner, 2008), eventually poisoning the source of the water.

A more long-term approach would require a change in policy on the domestic and foreign water distribution policy front. Domestically, Egypt could increase the efficiency of water utilization through more stringent regulation of the agricultural sector. This could be done, for example, through capping the maximum usage of each sector as is done in one of the world's most populated basins, the Pearl River Basin in China (EC JRC Workshop, 2012). Alternatively, benefit-sharing or win-win projects across the river basin would require a foreign policy shift. When riparian states jointly invest in the most efficient project and allocate the benefits basin-wide the result is generally referred to as a win-win situation (Scheumann *et al*, 2008: 27). Already there are signs that this is happening. On the website of the Egyptian Ministry of Water Resources and Irrigation the Ministry claims that its aim is to "[i]ncrease Egypt's share from the Nile water by cooperation and coordination with the Nile basin countries to establish joint projects to polarize and make use of the lost water".

In the past, Egypt has used its relatively larger power to coerce other riparians to comply with the highly uneven water distribution. A few coercive tactics have been mentioned above. The stalling of financial payments for upstream projects in the World Bank is exemplary of Egypt's coercive behaviour. Even more so, is threatening to use violent means to ensure the continued water flow.

There is a pattern of statements by various Egyptian Presidents stressing the possibility of using violent means to control the Nile water flow. In 1979, a statement by the Egyptian President, Anwar Sadat that "the only matter that could take Egypt to war again is water" (quoted in Mohamoda, 2003: 9) reflect the discourse of securitization (Section 4.2, page 76). Over the decades this rhetoric has continuously been repeated by high-ranking Egyptian government officials. In response to the signing of the CFA, the former Egyptian Parliamentary Affairs Minister Mufid Shehab said that the government considered the issue of Nile water a matter of "life and death" (quoted in *Egypt Independent*, 2010). How the post-revolutionary Egyptian government handles the Nile remains to be seen; however, there is little doubt that Egypt will continue to see the Nile as fundamental to its water security. Several authors have mentioned a Wikileaks document from September 2012 which claims that Sudan agreed to host an Egyptian airbase in the Darfur region to defend the Nile flow, if necessary, through military means or sabotage (Collins, 2012; Tadesse, 2012). Yet, instead of Egypt voicing this possibility out loud as was done previously, the intention represented in this leaked document was not meant as a public statement and a few days later the Egyptian government vehemently denied the allegations ("Egypt: Government denies deal with Sudan", 2012).

These threats are also a long way from erupting into a Water War. Some degree of conflict, as the SWH points out, may indeed not be negative (2004). It can serve as a catalyst in society for new ideas and compromise if there is a legitimate forum in which conflicts are negotiated. Legal systems and democratic institutions are examples of institutions which translate conflicts into peaceful processes (SWH, 2004). Only when these systems do not exist or do not work can "conflicts become detrimental for large groups in the affected societies" (SWH, 2004: 2). In this regard, the NBI translates conflictual views over the Nile into compromise, as a special committee is now doing with the Renaissance Dam in Ethiopia (Water21, 2012). Egypt's joining the NBI in 1999 despite the World Bank's sub-basin approach to project funding is one example of its changed strategy; staying in the NBI, despite the CFA, has illustrated Egypt's commitment to the institutional approach. Despite the political pressures, the NBI seems stable and Egypt continues to turn up at meetings despite its threats to the contrary.

Over the last decade, Egypt's foreign policy has taken a more cooperative tone towards benefit-sharing projects. In addition to taking part in the NBI negotiations, Egypt has announced large-scale upstream investment projects to increase efficient water utilization (El-

Din Amer, 2005: 8; Mungai, 2011). At the beginning of 2012, at the 13th Nile Day, celebrated at Jinja, Uganda, the Head of the Egyptian delegation, Hisham Qandil, said that Egypt imports US$6 billion *per annum* of foods, and that it wants to import increasingly from upstream Nile riparians (Egypt SIS, 2012). Egypt has also unveiled plans to invest US$5 billion in upstream electricity grids to increase their performance (Naswari, 2010). This kind of investment has the potential to create benefit-sharing or win-win solutions. At the same time, this kind of investment reasserts Egypt's hydro-hegemony, instead of using coercive strategies; Egypt positively reinforces alternative uses of the Nile.

What emerges from the description of the current situation is a picture of a region in flux. East Africa's potential to change the hydropolitical situation in the NRB is large, also due to its upstream position. However, it remains to be seen if the EAC Partner States can work together to create a stable regime because as individual states they are too weak to do so. Egypt seems to be adapting its strategies to remain in control of the water flow, taking part in NBI negotiations and investing in upstream projects, thus potentially creating win-win projects under its leadership. But what the future holds for the NRB is open to speculation.

4.5 The Future?

The final sections of this study attempt to tentatively look at the future of the White Nile, politically and environmentally. If East Africa, together with Ethiopia, its discourse partner, manages to unhinge Egyptian hydro-hegemony, this might not necessarily be a positive development. The consequences of regime change, i.e. in this case, the end of Egyptian hydro-hegemony, are a matter of controversy in IR theory and once again reflect the irreconcilable positivist / post-positivist views. In IR literature the consequences of a change in power relations, which has mostly been analyzed on the world system level, can be broadly categorized into two camps. Realists and neorealists predict the breakdown of order and peace as hegemony declines, while constructivists argue that new regime creation is difficult but does not necessarily lead to war.

Robert Cox has argued that a change in hegemony can have three outcomes (1987), all of which could be applied to the NRB. The first possible outcome is the strengthening of hegemony with partners. In the case of Egypt, Sudan has been a stable partner, in spite of occasional diplomatic disagreements (Saleh, 2008) and is also legally bound to Egypt through the PJTC. Although this does not necessarily mean that Egypt must continue to receive the

55bcm of the 1959 Agreement, Egypt could maintain control by compromising on the volume to increase its ideational power through increased legitimacy.
The second outcome is that a non-hegemonic order emerges, with different power centres held together by trade. The trade of Virtual Water in the basin is likely to increase, also through the Egyptian investment and land acquisition which were mentioned in the previous section. At the same time, the trade in HEP has been increasing and more cross-border power cables are being installed by the NELSAP.

The third possible outcome is that the counter-hegemon establishes a new regime. At the moment, East Africa does not seem strong enough, materially or in terms of stability, to take on that role. However, its potential as a region and upstream riparian to challenge Egypt in the future is there. The EAC's commitment to "Deepening and Accelerating Integration" (EAC, 2011a) and increasing continental market integration through the COMESA-EAC-SADC Tripartite, could push its material power over the next years. It will take careful planning and political commitment by the respective governments to alleviate poverty and overcome the political and social challenges that have plagued the region for decades.

In the end, one cannot predict the outcome of the power struggle in the NRB but one thing is for sure; the stress on the water resource is already immense and is likely to get worse in the future, due to basin-wide environmental decay. Whoever will be in power on the Nile banks in the future has to address the issues of environmental decay together with all stakeholders in the basin.

4.6 Environmental Decay

The year 2013 is the 10 year anniversary of the *Protocol of the Sustainable Development of the Lake Victoria Basin* and a good time to reflect on the environmental state of the Nile. Overall, it is not looking good and is set to get worse. In addition to population growth and increased waste, other human activities are putting pressure on the quantity and quality of the Nile, destroying the ecosystems and source of freshwater for future generations.

On Lake Victoria, environmental groups warn of falling water levels. According to the African Rivers Network (ARN), the Ugandan government is currently considering releasing more water to increase power production and meet its demand (2011). This would reverse the slow recovery of the Lake's ecosystem, maybe irreversibly so, after the water hyacinth invasion in the mid-1990s (UNEP, 2010: 83) The water hyacinths were so widespread that

local fishing boats could no longer launch their boats, seriously impacting the fish stock and local income. Through coordinated effort by the riparians under the auspices of the LVBC the hyacinths have disappeared but are now once again on the rise (UNEP, 2010: 84). Surface runoff from the Entebbe area, in Uganda, shows up as greenish clouds expanding into the Lake. Agricultural runoff and domestic waste runs straight into Lake Victoria unfiltered, further degrading water quality and causing the bloom of the hyacinths (UNEP, 2010: 83).

In Section 3.2.1 (page 49) the importance of the fishing industry to the region was described, particularly in relation to the Nile perch which was artificially introduced in 1954 and whose population exploded in the 1970s. This led to the explosion of fishery as a source of income in Lake Victoria in the 1980s. As a result, the fish stocks in the Lake have been decreasing since (EfD, 2008). As other sources of income are scarce, the number of fisherfolk grew by 52% from 2000-2006 (LVFO, 2012) and fisherfolk go further onto the lake with increasing motorization. In order to protect the species it has been suggested that fishing be prohibited within 200 metres of the shore but nothing has been done to implement this suggestion (LVFO, 2012).

All along the Nile, large dams and flooding of land reservoirs, loss of biodiversity, invasive weeds, and increased pollution by unaccountable private companies, is having a considerable impact on the local ecosystems, which impact will get worse (Okurut, 2011). According to Okbazghi Yohannes desertification and the extension of the Sahelian belt is accelerating (2009: 74). Rainfall has decreased by 15% between 1956 and 1985. Due to the damming in Egypt only 2% of the water flow reaches the Mediterranean Sea (Brunnée & Toope, 2002: 9) which has severe impacts as the river's mouth is sinking and eroding the river bed (Bohannon, 2010). This is due to the fact that deposits of soil no longer offset the natural effect of soil compaction. Once soil begins to fall away it accelerates erosion. Due to the high levels of evaporation in the desert areas, Lake Nassar has severely increased soil salinity levels. Pollution is so severe that Egypt has been classified as Water-Scarce Hotspot in the 4th UNESCO World Water Development Report which states that "the main challenge to the sustainability of Egypt's water resources is water pollution" (2012: 15)

The future of resource availability is hard to predict, especially as climate change is set to have severe consequences on the region. However, a survey by the OECD modelled the likely outcomes of climate change for the Nile. Temperatures are likely to rise across the region which means demand for water will rise, even if the population size remains stable

(Agrawala *et al.*, 2004: 13). According to the researchers, rainfall will become more seasonal which means floods during the winter months and droughts in the summer (Agrawala *et al.*, 2004: 13). Both extremes would lead to dislocation and aggravated food insecurity (Yohannes, 2009: 83). Ironically, dams are often described as adaptive capacities to meet future climate change challenges but the opposite is true. As more HEP dams are being built, the Nile's adaptive capacity in response to climate change is actually decreasing because the dams' water storage reservoirs increase evaporation rates. Also, the dams are not planned for the large floods that are likely to arrive with climate change, and pose a risk to the entire basin's population when they burst (Beilfuss, 2012). This argument leads Alam *et al.* to ask whether

> a technical solution, such as physical infrastructure, can answer the complex social, ecological, financial, and political problem of ensuring a reliable water supply? (2011: 428).

Neither the acquired right position, nor absolute sovereignty takes environmental protection into account sufficiently. Even the 1997 Draft Convention focuses too little on conservation and concentrates too heavily on economic development (Waterbury, 2002). Outside the power political realm, the bleak forecast for the Nile's quality and quantity requires comprehensive cooperation of all riparians, whether under Egyptian leadership or otherwise.

4.7 Changing Hydropolitical Positions

The fourth chapter of the study on the impacts of East Africa's increasing power on Egypt's hydro-hegemony on the Nile started by analysing the counter-hegemonic strategies East Africa has utilised to change the current asymmetrical power relationship and resulting uneven water distribution. The seven counter-hegemonic strategies, taken together, proved to be successful in challenging Egypt and claiming Nile water. The mobilisation of Chinese money to construct dams and the CFA especially, have been very successful counter-hegemonic strategies. However, East Africa is also facing some internal challenges over shared governance of Lake Victoria. Mistrust over water levels and Uganda's relationship with Egypt, as well as localised conflict over fish stocks have been very contentious. Internally unilateral projects and uncoordinated policies lead to tensions, while externally multilateral negotiations seem to be the norm.

This discussion on East Africa's successes and challenges on the Nile was followed by the analysis of the securitization of water which dominates the domestic discourses. The securitization of the Nile in form of threats and uncompromising negotiation positions, even if irrational, makes basin-wide agreements more difficult. The existential fear of losing the Nile and its water for survival also explains why riparians strive to increase their power on the transboundary watercourse.

The Nile riparians are not alone in their fears over food security. International investors have been buying or leasing land in the NRB area on a massive scale to meet their domestic demand, decreasing water availability for the local populations upstream and downstream. Whether through dams, increased irrigation schemes or climate change, Egypt is set to receive less water in the next decades than previously, and is no longer in the position to obstruct upstream riparians from utilising the water. Egypt's poewr is decreasing but it is adjusting its water resource control strategies. In the past, Egypt has used coercive means, like threats, to hinder upstream hydro-infrastructure projects. It seems as though the Egyptian government today rather invests in alternative water usage, more efficient utilisation and the trade in Virtual Water. Nevertheless, the newly elected Egyptian government, like the one before it, has made the Nile a priority and is likely to protect its interests where it can.

This assessment has led to an analysis of three scenarios of what the future of the Nile could look like in terms of power politics. Either, things remain the same and Egypt can maintain consolidated control with Sudan as a partner, or trade in Virtual Water and HEP will bind the riparians so closely that it diminishes other power indicators and a multipolar regime emerges. The final option would consist of new regime formation by upstream riparians, although this would most of all require East Africa to overcome its own challenges.

Regardless of who will be more powerful in the future, a basin-wide approach to the looming environmental crisis is urgently needed as water quality and quantity are under stress owing to detrimental human activities.

CHAPTER 5: CONCLUSION

5.1 Summary of Findings

This study has utilised the Hydro-hegemony framework to investigate the consequences of East Africa's increasing power on Egypt's hydro-hegemony in the NRB. This chapter will revisit the findings generated in each of the previous chapters, before examining potential topics and directions for future research. The chapter will then proceed to tentatively generalise the findings to other African transboundary river basins.

Chapter 2 attempted to provide an overview of the discussions that have framed the hydropolitical discussion in IR. It emerged that while there has been much emphasis on *Water Wars* (Starr, 1991) little research has been done into asymmetrical power relations between riparian states. The Hydro-hegemony framework by Zeitoun and Warner (2006) has brought together scales of conflict and power indicators at the basin level. In addition, Ana Cascao, also from the LWRG, developed a framework to analyse counter-strategies of non-hegemons.

The LWRG's Hydro-hegemony framework, it was argued, falls prey to the territorial trap and the state-centric approach is insufficient to cover East African hydropolitics. Based on East Africa's approaches to historic, political, economic and resource governance issues, it was proposed in this study that a regional analysis is more apt. The argument was advanced that the conceptualisation of relative power, water resource control strategies, and intensities of conflict can also be applied at the regional level.

Chapter 3 proceeded to establish the asymmetrical power relationship that has prevailed in the NRB, represented in terms of the three pillars of hydro-hegemony which have over decades supported Egypt's hydro-hegemony, as well as the growing power that East Africa is carving out. In terms of material power, Egypt continues to be the most powerful actor in the basin, although opening up regional economic markets has brought with it considerable growth in East Africa. In the other aspects – the technical, financial and legal, as well as in institutional settings – East Africa has been catching up with Egypt over the past decade. From the arguments in the third chapter it was concluded that East Africa is indeed challenging Egypt's hydro-hegemony in the NRB.

Based on this finding, Chapter 4 went on to highlight the impacts of East Africa's power challenge on Egypt. Although Egypt used to be able to stop dams being built they are now effectively powerless in this regard. Where in the past Egypt controlled the legal debate in the NRB, the multilateral CFA has forced Egypt to consider how to secure its access to the Nile water legally. The response of Egypt to these developments has been a change from coercive to cooperative strategies to maintain the *status quo*. Whether this change of strategy can actually maintain Egypt's hydropolitical position remains to be seen. It seems relatively sure though that due to environmental and human pressures, East Africa and Egypt will be forced to cooperate in the future and plan for a future time with less, and lower quality water. The findings in Chapter 4 reveal that unless the riparian states cooperate to utilise the finite water more efficiently, it will become a lose-lose situation for everyone.

5.2 Recommendations for Future Research

The recommendations made in this section are to a large degree based on the limitations that have framed this study, outlined in Chapter 1. There were some aspects that had to be excluded due to the time frame and scope of analysis, but in future research projects these aspects could lead to a greater understanding of the subject matter.

First, the time frame available to complete this study was limited to one year. A long-term study over the next decade might highlight alternative trends. Considering the political and hydrological volatility of East Africa and Egypt, the power relations could shift considerably over the coming decade. On one hand, the chances of the DRC erupting into another civil war which once again consumes the whole region is not negligible, even after years of the largest UN peacekeeping mission, as reports of mass rapes and threats to East Africa's regional security repeatedly feature in the international news. The neighbouring conflict hotspot, South Sudan, also poses a variety of threats to the region. Refugee flows and cross-border raids have emanated from this, the newest sovereign state. Local resource conflicts between refugees, pastoralists and farmers have attracted some researchers' attention (SWH, 2004), but there had been little attention to linking these to the larger basin-wide pressure on water resources.

At the regional level, political disagreements have once before led to the collapse of the first East African Community, in 1977, and there is no guarantee that this time the EAC is more stable. Though power differences between the EAC Partner States were largely left out of the

analysis, a future analysis of the NELSB power configurations could give further indications of whom the water will flow towards – especially if private industry is taken into account. On the topic of 'water flowing to money', the EXIM Bank of China and the World Bank have emerged as actors in their own right in the international sphere, especially as their political negotiation become increasingly important in transboundary river basins (Ministry for Foreign Affairs, Sweden, 2001: 8; ARN, 2011). Within the narrow scope of this analysis, these new actors in hydropolitics have not been addressed. The influence and agency of these internal and external actors could serve as platforms for further research. In this regards, it could be interesting to research to what degree the EAC is actually coordinating their water policies since, on the ground, anyone can dig a hole and start watering their field if no implementation mechanisms are in place.

The recent events in Egypt have added to the impression that political stability, previously a cornerstone of Egyptian hydro-hegemony, is not as stable as it used to be. The newly elected Egyptian leadership might make both tactical and strategic foreign policy changes, affecting the type of strategy over the water resources. The focus of this study was fundamentally on the East African perspective and it was beyond the scope of the study to look in-depth at the consequences of domestic Egyptian power changes, an interesting aspect for future studies.

Most unpredictably, the consequences of climate change have the power to shift the very basic geographical indicators taken for granted in this study. As an external and more powerful actor than both East Africa and Egypt, it could plunge both ends of the Nile into a severe water crisis, making cooperation a necessity and putting asymmetrical power aside as emergency measures will have to be implemented.

The players that have not been mentioned, their development and larger global developments affect the power constellation and water availability in the NRB and are thus recommended for future research. The above discussion can be used as a starting point to understand changing processes. Only if we understand the processes and agents involved in water distribution can we hope to achieve a sustainable and equitable regime. It is the responsibility of IR students to take part in this critical process, keeping in mind that water is life.

Finally, in the first chapter it was argued that case studies can provide generalisations to similar settings and indeed this is one of the methodological merits. The detailed analysis of one specific setting provides high internal validity which can then be transferred to the population. As Africa's transboundary river basins cover 65% of the total area, 78% of the

people and 93% of the surface water (Ashton, 2009), it is suggested that the current study may lend itself to interesting comparative studies on other African transboundary river basins in the future, focusing on the common challenges and different solutions to them. At this point in history, governments in riparian countries across Africa should agree that negotiations are the only way transboundary basins can go forward to prepare for climate and water flow variations.

In short, the answer to Laswell's question *Who gets how much water and why?* (1935) is that Egypt utilises most of the water and maintains its hydro-hegemony through its relatively larger power and water resource control strategies. However, the NRB is a region in flux and East Africa has been challenging Egypt on numerous levels and is successfully claiming more water itself. The impact of that change in power relations on Egypt, could, however, be dwarfed by the looming environmental crisis on the Nile.

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